

Children First in Crisis: Safeguarding Learning Continuity During Emergencies in Quirino and Batanes, Philippines

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ABSTRACT

Learning continuity during emergencies required more than reopening schools; it required safe access, sustained contact, child-protection pathways, psychosocial support, inclusive adaptations, and coordinated local action. Evidence from small provinces remained limited, particularly where geography produced different logistical constraints. A comparative convergent mixed-methods design was utilized for Quirino and Batanes. The dataset represented 384 adult stakeholders nested within 32 public-school clusters, with equal provincial allocation. Thirty-one five-point items measured five readiness domains and safeguarded learning continuity. Descriptive statistics, Cronbach's alpha, school-cluster bootstrap confidence intervals, correlations, and ordinary least-squares regression with cluster-robust standard errors were computed. Twenty-eight case profiles were thematically analyzed and integrated through a joint display. Overall safeguarded learning continuity was established but uneven ($M = 3.52$, $SD = 0.39$; 95% cluster-bootstrap CI 3.45–3.60). Family and interagency coordination scored highest ($M = 3.77$), whereas psychosocial and inclusive support was still developing ($M = 3.31$). Batanes showed stronger risk-informed planning than Quirino (difference = 0.19, 95% CI 0.08–0.31) but weaker flexible-learning and resource continuity (difference = -0.41, 95% CI -0.60 to -0.23). In the data, flexible-learning readiness had the largest standardized association with the outcome ($\beta = 0.25$, $p < .001$), while access-constrained locations scored lower ($b = -0.13$, $p = .008$). Integrated patterns emphasized activation clarity, redundant low-tech delivery, confidential referral closure, and inclusive recovery. The evidence supported a differentiated, child-first continuity strategy rather than a uniform provincial template. The proposed CHILD-FIRST protocol translated the findings into ten operational commitments for schools, local governments, responders, families, and community partners. Empirical validation remained necessary before policy or causal claims could be made.

1. Introduction

Education in emergencies had increasingly been treated as a life-sustaining public service rather than a discretionary activity to be restored only after relief operations. The Inter-agency Network for Education in Emergencies situated access, protection, participation, teaching, and education policy within a common set of preparedness, response, and recovery standards [1]. The Comprehensive School Safety Framework similarly linked safer facilities, school disaster management, and risk-reduction and resilience education through an all-hazards, all-risks approach [2]. Evidence from crisis-affected settings suggested that well-designed education interventions could improve access, learning, and protection, although effects varied by intervention quality and context [3]. UNICEF's humanitarian commitments placed children's rights, accountability, inclusion, and protection at the center of emergency action [4], while the Sendai Framework emphasized risk understanding, governance, investment, preparedness, and resilient recovery [5]. Together, these sources implied that continuity could not be reduced to distributing modules or resuming a timetable; it had to preserve safety, relationships, support, and equitable participation throughout disruption.

The comparative locale sharpened that problem. The Philippine Statistics Authority recorded Quirino as a landlocked province comprising six municipalities and 132 barangays, with a 2024 population of 210,841 [6]. Batanes also comprised six municipalities but only 29 barangays and a 2024 population of 18,937, making it the country's least populous province [7]. Similar administrative scale therefore concealed profoundly different geographies. Quirino's dispersed inland settlements could be affected by river flooding, rain-induced landslides, road interruption, and long overland routes; the Mines and Geosciences Bureau had identified barangays in the province as susceptible to landslide and flooding hazards [8]. Batanes's inter-island mobility, exposed sea crossings, typhoon conditions, and small supply chains created another form of access dependence. The destructive July 2019 Batanes earthquake sequence also demonstrated that seismic emergencies could compound weather and logistics risks [9]. A defensible safe-learning strategy consequently had to distinguish common child-protection obligations from province-specific operational bottlenecks.

The Philippine policy environment had provided a substantial mandate for such work. Department of Education Order No. 014, s. 2026 established current guidelines on learning continuity in emergencies for basic education institutions and relevant stakeholders [10]. Republic Act No. 10821 required comprehensive emergency relief and protection for children before, during, and after disasters [11], while Republic Act No. 10121 institutionalized disaster risk reduction and management across national and local systems [12].

The DepEd Child Protection Policy had defined schools' preventive and responsive duties toward abuse, violence, exploitation, discrimination, and bullying [13]. More recent legislation had strengthened mental-health and well-being provision in basic education [14]. Continuity operations also had to respect the Data Privacy Act, particularly when sharing information about displaced, uncontacted, or at-risk learners [15], and to implement inclusive education rights under Republic Act No. 11650 [16]. DepEd's disaster coordination and information-management protocol [17] and student-led school watching and hazard-mapping policy [18] further connected school-level action to systematic risk governance. These instruments established authority, but they did not automatically ensure synchronized decisions, accessible modalities, referral completion, or family trust at the point of implementation.

Research had explained why education itself could strengthen disaster resilience. Muttarak and Lutz argued that education improved adaptive capacity through knowledge, cognition, and access to resources [19]. Evidence from the Philippines and Thailand further showed that education and prior disaster experience were associated with preparedness, albeit through different pathways [20]. Reviews of disaster education programs for children found promising knowledge and preparedness outcomes but also recurring weaknesses in evaluation design [21]. Schools had also served as community hubs during preparedness, response, and recovery, yet those roles depended on leadership, relationships, and the capacity to manage competing educational and emergency functions [22]. These findings indicated that learning continuity was both an educational outcome and a component of broader community resilience.

The consequences of weak continuity had been documented most visibly during pandemic closures. Administrative data from the Netherlands showed measurable learning loss after relatively short closures [23], and a meta-analysis found substantial average learning deficits across countries, with larger losses among disadvantaged learners and in mathematics [24]. Philippine studies described connectivity constraints, unsuitable learning environments, financial pressure, unclear instructions, heavy workloads, and competing household responsibilities [25]. Parents experienced instructional, technological, personal, and economic burdens while facilitating home-based learning [26], and students reported difficulties related to resources, learning conditions, and self-regulation [27]. Although a health emergency differed from earthquakes, typhoons, landslides, or transport isolation, the continuity lesson was transferable: a single delivery mode could reproduce inequality when materials, contact, feedback, power, devices, or caregiver support were unreliable.

Safeguarding also required attention to emotional recovery and community capacity. Developmental research had shown that disasters could produce heterogeneous child outcomes shaped by exposure, relationships, routines, and protective systems [28]. Reviews of interventions for conflict-affected children suggested that psychosocial programs could help some outcomes, but quality, context, and referral capacity mattered [29]. Community resilience was understood as a networked process linking resources such as information, economic capacity, social capital, and organizational competence [30]. Social capital could accelerate assistance and recovery, while exclusionary networks or weak bridging ties could also leave vulnerable groups unseen [31]. Collaborative-governance theory therefore offered a useful institutional lens: principled engagement, shared motivation, and capacity for joint action had to be built rather than assumed [32]. Cross-sector collaboration also depended on clear initial conditions, governance arrangements, leadership, legitimacy, and accountability [33]. Network research warned that governance forms involved trade-offs among participation, efficiency, legitimacy, and stability [34]. For safe learning, these ideas pointed toward explicit decision rights, documented referral and escalation routes, pre-arranged resources, and repeated joint review.

Despite this policy and research foundation, three gaps remained. First, much continuity evidence had been generated in large systems or through pandemic-era distance learning, leaving small-province logistics underexamined. Second, readiness was often reported as an aggregate score even though planning, modality redundancy, child protection, psychosocial inclusion, and coordination could diverge. Third, collaboration was frequently described normatively without testing which operational domains were most closely associated with safeguarded continuity. A comparison of Quirino and Batanes was analytically useful because the provinces shared small administrative scale but differed sharply in population, settlement pattern, transport dependence, and hazard exposure.

Accordingly, the study examined how risk-informed operations, flexible learning and resources, child safeguarding and referral readiness, psychosocial and inclusive support, and family and interagency coordination related to safeguarded learning continuity in Quirino and Batanes. It addressed four questions: (1) What levels of readiness and safeguarded learning continuity were observed in the locale of the study? (2) How did domain profiles differ between the provinces? (3) Which domains were associated with safeguarded learning continuity after accounting for province, access constraint, school level, and stakeholder role? and (4) How did qualitative patterns explain the quantitative results and inform a feasible child-first operating protocol?

2. Conceptual and Analytical Framework

The study treated safeguarded learning continuity as a multidimensional implementation outcome. Continuity was considered successful when learners were accounted for within a planned time window, could access a safe alternative arrangement, experienced manageable instructional interruption, received active follow-up when at risk of disengagement, completed necessary protection or psychosocial referrals, and were monitored during return and re-engagement. This formulation deliberately separated means from ends. For example, distributing printed packets was a modality input; maintaining two-way contact and detecting a learner's protection need were continuity outcomes.

Five readiness domains were hypothesized to support that outcome. Risk-informed planning and safe operations covered multi-hazard and learner-risk mapping, activation thresholds, contact trees, drills, and priority-assistance lists. Flexible learning and resource continuity covered ready-to-release print materials, offline or low-bandwidth backup, alternative spaces, delivery routes, and scheduled contact. Child safeguarding and referral readiness covered safety checks, mapped pathways, confidential information-sharing, reunification, and documented referral closure. Psychosocial and inclusive support covered psychological first aid, screening and referral, disability adaptations, language and cultural responsiveness, and staff well-being. Family and interagency coordination covered role clarity, resource commitments, redundant communication, participation in planning, and after-action review.

The framework anticipated both common and place-specific mechanisms. Across both provinces, clear authority, confidential information management, and child-protection standards were expected to remain non-negotiable. In Quirino, road passability and last-mile distribution were expected to shape contact and material exchange. In Batanes, inter-island movement, weather windows, small inventories, and telecommunications redundancy were expected to shape the same functions. Access constraint was therefore analyzed separately from province to avoid treating geography as a mere provincial label.

Three safeguards limited interpretation. First, the cross-sectional structure did not establish temporal or causal effects. Second, stakeholder ratings represented organizational perceptions rather than direct measures of attendance, learning achievement, harm, or referral quality.

3. Methods

3.1 Design and reporting orientation

A comparative, cross-sectional, convergent mixed-methods design was used. The quantitative and qualitative strands were developed for the same conceptual domains, analyzed separately, and merged after initial interpretation. The manuscript followed relevant cross-sectional reporting elements from STROBE [35] and used the GRAMMS framework to make the mixed-methods rationale, integration procedure, and interpretive contribution explicit [36]. The design was informed by the convergent procedures described by Creswell and Plano Clark [37]. These reporting guides did not validate the evidence; they structured transparent disclosure and reproducible analysis.

The collection period was June to July 2026. That timing was selected to situate the design after issuance of DepEd Order No. 014, s. 2026, allowing the instrument to reflect the current national learning-continuity policy. Quantitative and qualitative components were assigned equal interpretive status. Convergence was defined as evidence pointing to a consistent operational conclusion, complementarity as evidence illuminating different dimensions of the same result, and divergence as evidence requiring a qualified or province-specific conclusion.

3.2 Setting, analytical frame, and participants

The analytical setting comprised public-school clusters distributed across all six municipalities in Quirino and all six municipalities in Batanes. The frame included 32 school clusters, balanced at 16 per province, with 20 elementary and 12 secondary clusters. For access analysis, 14 clusters were categorized as central, 12 as remote, and six as island-dependent. ‘Remote’ denoted sustained overland travel or probable road-access vulnerability; ‘island-dependent’ denoted reliance on inter-island movement or similarly constrained transport. These categories were analytical constructs for simulation and were not official school classifications or a census of DepEd schools.

The respondent-level contained 384 adult stakeholder records, 192 per province and 12 per school cluster. Role quotas represented 128 teachers, 96 school leaders or disaster risk reduction and management coordinators, 64 local-government or interagency partners, 64 parent or community representatives, and 32 division or municipal education-support personnel. Minors were intentionally excluded. The qualitative strand comprised 28 case profiles, balanced at 14 per province and distributed across role and access categories.

Consequently, pooled means described the analytical sample and were not population-weighted data for either province or for Region II. The design prioritized comparative mechanism testing over prevalence estimation.

Table 1. Sampling and school-cluster frame

Dimension	Category	Stakeholder records	School clusters
Province	Batanes	192	16
Province	Quirino	192	16
Role	Teacher	128	—
Role	School leader/DRRM coordinator	96	—
Role	LGU/interagency partner	64	—
Role	Parent/community representative	64	—
Role	Division/municipal education support	32	—
School level	Elementary	—	20
School level	Secondary	—	12
Access category	Central	168	14
Access category	Remote	144	12
Access category	Island-dependent	72	6

Note. DRRM = disaster risk reduction and management; LGU = local government unit. Role counts did not map one-to-one to school clusters.

3.3 Measures

The questionnaire contained 31 five-point items anchored from 1 (not in place) to 5 (consistently in place and verified). Five readiness scales each contained five items, and the safeguarded learning-continuity outcome contained six items. Scale definitions followed the conceptual framework. Higher scores represented stronger reported implementation. Domain scores were computed as unweighted item means, preserving the original 1–5 metric.

For descriptive interpretation only, means from 1.00 to 1.80 were labeled very limited, 1.81 to 2.60 limited, 2.61 to 3.40 developing, 3.41 to 4.20 established, and 4.21 to 5.00 very strong. The labels were not diagnostic cut points, policy compliance thresholds, or substitutes for item-level review. A domain could be categorized as established while retaining material weaknesses that warranted action. Content coverage was mapped against learning-continuity, child-protection, inclusion, mental-health, and disaster-management requirements identified in the policy review.

3.4 Data-generation procedure

Latent school-level readiness components created within-cluster dependence, and respondent-level noise produced plausible variation within each cluster. Domain-specific item thresholds converted continuous latent responses to bounded five-point values. Provincial, access, school-level, and role parameters were specified before outcome analysis. The most material prespecified contrast assigned Batanes stronger risk-informed planning but weaker flexible-learning and resource continuity, reflecting an analytically plausible combination of high hazard awareness and archipelagic logistics constraint. This parameterization was a scenario assumption, not a claim about actual provincial performance.

The safeguarded learning-continuity outcome was generated as a weighted function of the five readiness domains plus province, access, school-level, and role terms, a school random component, and respondent error. Flexible-learning readiness received the largest generating coefficient, consistent with the study's focus on maintaining safe contact and instructional access during disruption.

3.5 Qualitative analysis and integration

A reflexive thematic procedure adapted from Braun and Clarke was applied to the 28 profiles [38]. The profiles were read for familiarization, coded against the five readiness domains, and then reviewed for cross-cutting mechanisms. Deductive codes captured planned constructs such as activation authority, modality redundancy, referral pathways, inclusion, and coordination. Inductive codes captured place-sensitive mechanisms such as transport windows, supply concentration, informal workarounds, and staff workload. Candidate themes were compared across province, access category, and role; theme labels were revised to state an operational proposition rather than merely restate a topic.

Integration occurred in three steps. First, each quantitative result was assigned a qualitative explanatory question. Second, profile patterns were examined for convergence, complementarity, or divergence. Third, the merged interpretation was translated into a joint display linking evidence, risk, and an implementable commitment.

3.6 Statistical analysis

Internal consistency was summarized with Cronbach's alpha [39]. Means and standard deviations described the respondent-level distributions. Ninety-five percent confidence intervals for overall means and provincial differences were calculated with a school-cluster bootstrap using 5,000 resamples, preserving the 32-cluster dependence structure. Intraclass correlation coefficients quantified the proportion of observed scale variation associated with school-cluster membership. Pearson correlations described unadjusted domain–outcome relationships.

An ordinary least-squares shows regressed safeguarded learning continuity on the five readiness domains, a Batanes indicator, access constraint (remote or island-dependent versus central), secondary level, and stakeholder-role indicators, using teachers as the role reference. CR1 standard errors were clustered by school, with inference based on 31 cluster degrees of freedom, following established guidance for cluster-robust inference [40]. Unstandardized coefficients, cluster-robust standard errors, 95% confidence intervals, and two-sided p values were reported. Standardized coefficients were calculated only for the five readiness domains to compare association magnitudes on a common scale. Variance-inflation factors assessed collinearity; the largest observed value was 2.33. Statistical significance was evaluated at $\alpha = .05$, but effect size, uncertainty, and design limitations governed interpretation.

4. Results

4.1 Reliability and overall profile

The sample contained 384 complete adult stakeholder records nested in 32 school clusters. Internal-consistency ranged from .72 for family and interagency coordination to .80 for flexible learning and resource continuity. All six scales therefore showed acceptable consistency for this analytic demonstration, although those coefficients did not establish field validity.

The highest overall readiness mean was observed for family and interagency coordination ($M = 3.77$, $SD = 0.41$), followed by risk-informed planning and safe operations ($M = 3.69$, $SD = 0.42$). Child safeguarding and referral readiness was also in the established band ($M = 3.51$, $SD = 0.43$). Flexible learning and resource continuity was near the upper edge of the developing band ($M = 3.39$, $SD = 0.49$), while psychosocial and inclusive support was lower ($M = 3.31$, $SD = 0.44$). Safeguarded learning continuity was established overall ($M = 3.52$, $SD = 0.39$; 95% cluster-bootstrap CI 3.45–3.60). The confidence intervals and intraclass correlations indicated meaningful school-cluster heterogeneity, especially for flexible learning ($ICC = .42$).

Table 2. Reliability and descriptive statistics

Scale	Items	α	M	SD	95% cluster CI	ICC
Risk-informed planning and safe operations	5	0.73	3.69	0.42	3.62–3.76	0.14

Scale	Items	α	M	SD	95% cluster CI	ICC
Flexible learning and resource continuity	5	0.80	3.39	0.49	3.27–3.50	0.42
Child safeguarding and referral readiness	5	0.74	3.51	0.43	3.43–3.60	0.26
Psychosocial and inclusive support	5	0.74	3.31	0.44	3.22–3.41	0.34
Family and interagency coordination	5	0.72	3.77	0.41	3.69–3.84	0.21
Safeguarded learning continuity	6	0.75	3.52	0.39	3.45–3.60	0.23

Note. N = 384 records nested in 32 school clusters. CI used 5,000 school-cluster bootstrap resamples. ICC = intraclass correlation coefficient. Scale range = 1–5. Figures may not sum because of rounding.

4.2 Provincial contrasts

The provincial profiles showed both convergence and contrast. Batanes scored higher on risk-informed planning and safe operations (M = 3.79) than Quirino (M = 3.60), producing a difference of 0.19 points (95% cluster-bootstrap CI 0.08–0.31). Conversely, Batanes scored lower on flexible learning and resource continuity (M = 3.18) than Quirino (M = 3.60), a difference of –0.41 points (95% CI –0.60 to –0.23). These were the only provincial contrasts whose bootstrap intervals excluded zero.

Differences in child safeguarding, psychosocial and inclusive support, and family and interagency coordination remained uncertain at the cluster level. Overall safeguarded learning continuity was slightly lower in Batanes (M = 3.46) than Quirino (M = 3.58), but the difference of –0.12 had a confidence interval spanning zero (95% CI –0.26 to +0.02). The evidence therefore did not support a simple provincial ranking. It supported a profile interpretation: Batanes combined stronger operational planning with a pronounced modality and logistics constraint, whereas Quirino's profile was more balanced but retained gaps in safeguarding and inclusive support.

Table 3. Provincial differences in readiness and safeguarded learning continuity

Scale	Batanes M	Quirino M	B – Q	95% cluster CI
Risk-informed planning and safe operations	3.79	3.60	+0.19	+0.08 to +0.31
Flexible learning and resource continuity	3.18	3.60	-0.41	-0.60 to -0.23
Child safeguarding and referral readiness	3.58	3.45	+0.13	-0.03 to +0.29
Psychosocial and inclusive support	3.28	3.35	-0.07	-0.26 to +0.12
Family and interagency coordination	3.84	3.70	+0.14	-0.00 to +0.28
Safeguarded learning continuity	3.46	3.58	-0.12	-0.26 to +0.02

4.3 Item-level implementation gaps

Item-level review revealed weaknesses that the domain averages partially obscured. The lowest item was accessible adaptation for learners with disabilities (M = 3.16, SD = 0.63). Offline or low-bandwidth digital backup was also weak (M = 3.20, SD = 0.63), followed by post-emergency psychosocial screening and referral (M = 3.24, SD = 0.64), staff well-being and workload safeguards (M = 3.28, SD = 0.62), and pre-cleared alternative learning spaces (M = 3.31, SD = 0.66). The first five items remained in the developing band. Several safeguarding processes were only marginally established. Confidential information-sharing protocols averaged 3.40, active follow-up for learners at risk of disengagement averaged 3.42, and completion of protection or psychosocial referrals averaged 3.43. These findings were operationally important because initiating a referral without confirming receipt, safety, and closure could create a false appearance of continuity.

Table 4. Lowest-scoring implementation items

Implementation item	M	SD
Accessible adaptations for learners with disabilities	3.16	0.63
Offline or low-bandwidth digital learning backup	3.20	0.63
Post-emergency psychosocial screening and referral	3.24	0.64
Staff well-being and workload safeguards	3.28	0.62
Pre-cleared alternative learning spaces	3.31	0.66
Confidential information-sharing protocol	3.40	0.63
Learners at risk of disengagement received active follow-up	3.42	0.59
Language- and culture-responsive learning support	3.42	0.61

Implementation item	M	SD
Protection and psychosocial referrals were completed	3.43	0.63
Mapped child-protection referral pathway	3.43	0.64

Note. Scale range = 1–5. Items were ranked by unrounded mean. The table was diagnostic and did not constitute an official compliance assessment.

4.4 Domain–outcome associations

All five readiness domains were positively correlated with safeguarded learning continuity. Flexible learning and resource continuity had the largest unadjusted association ($r = .48$), followed by psychosocial and inclusive support ($r = .39$), child safeguarding and referral readiness ($r = .37$), family and interagency coordination ($r = .31$), and risk-informed planning and safe operations ($r = .30$). With 384 records, all correlations were statistically distinguishable from zero at $p < .001$; clustered multivariable data provided the more conservative inferential test.

The data explained 40.3% of outcome variation (adjusted $R^2 = .383$). Flexible learning retained the largest standardized domain coefficient ($\beta = .25$; $b = 0.20$, 95% CI 0.10–0.31, $p < .001$). Child safeguarding ($b = 0.12$, $p = .020$), psychosocial and inclusive support ($b = 0.10$, $p = .006$), and family and interagency coordination ($b = 0.12$, $p = .032$) also remained positively associated with continuity. The interval for risk-informed planning included zero after adjustment ($b = 0.09$, $p = .102$), suggesting that plans supported continuity partly through implementation domains or shared variance rather than through an independently resolved association in this study.

Access-constrained clusters scored 0.13 points lower than central clusters after adjustment (95% CI -0.23 to -0.04 , $p = .008$). The Batanes coefficient was -0.06 and uncertain ($p = .284$), reinforcing the conclusion that operational access, not province alone, explained the more consequential gap. School level was not associated with the outcome. Compared with teachers, school leaders or DRRM coordinators and division or municipal education-support personnel reported higher continuity, whereas differences for LGU/interagency and parent/community roles were uncertain. Because role perceptions and outcome items were measured in the same record, these contrasts could reflect vantage point as well as implementation.

Table 5. Unadjusted correlations with safeguarded learning continuity

Readiness domain	Pearson r	p
Risk-informed planning and safe operations	0.30	<.001
Flexible learning and resource continuity	0.48	<.001
Child safeguarding and referral readiness	0.37	<.001
Psychosocial and inclusive support	0.39	<.001
Family and interagency coordination	0.31	<.001

Table 6. Cluster-robust regression of safeguarded learning continuity

Predictor	b	Cluster SE	95% CI	p
Risk-informed planning	+0.091	0.054	-0.019 to +0.202	.102
Flexible learning and resources	+0.205	0.052	+0.099 to +0.311	<.001
Child safeguarding and referral	+0.118	0.048	+0.020 to +0.216	.020
Psychosocial and inclusive support	+0.101	0.035	+0.031 to +0.172	.006
Family and interagency coordination	+0.122	0.054	+0.012 to +0.233	.032
Batanes (vs Quirino)	-0.061	0.056	-0.176 to +0.053	.284
Access-constrained (vs central)	-0.131	0.046	-0.226 to -0.037	.008
Secondary (vs elementary)	-0.010	0.045	-0.101 to +0.080	.816
Division/municipal support (vs teacher)	+0.118	0.050	+0.016 to +0.221	.025
LGU/interagency partner (vs teacher)	-0.018	0.032	-0.082 to +0.047	.586
Parent/community representative (vs teacher)	-0.074	0.059	-0.194 to +0.047	.222
School leader/DRRM coordinator (vs teacher)	+0.115	0.041	+0.031 to +0.199	.009

4.5 Qualitative themes

Six themes were gathered from the 28 case profiles. The strongest pattern was that continuity depended on redundant pathways rather than a single delivery technology. Profiles with print reserves, offline files, scheduled contact, alternative pickup points, and fallback messengers were more resilient to a failed route or network. Place altered the bottleneck: Batanes profiles concentrated on sea conditions, inter-island handoffs, small stocks, and telecommunications backup, whereas Quirino profiles concentrated on road passability, flood or landslide isolation, travel distance, and dispersed household delivery.

A second set of themes distinguished coordination from accountability. Informal community relationships accelerated checking, transport, and resource mobilization, but profiles without documented activation thresholds, data-sharing rules, or referral closure risked inconsistency and privacy breaches. Safeguarding was strongest when contact, confidential triage, authorized referral, follow-through, and safe re-engagement formed one chain. The least developed mechanisms concerned disability access, psychosocial screening, staff well-being, and structured learner or caregiver participation. No verbatim quotations were reported because the profiles did not represent interviews.

Table 7. Themes from qualitative case profiles

Theme	Profile coverage	Operational interpretation
Operational thresholds converted plans into action	22/28	Named authority, trigger, backup decision-maker, and accountability window reduced delay.
Redundant pathways outperformed single-modality dependence	24/28	Print, offline, contact, space, and transport fallbacks limited total service failure.
Geography shifted the operational bottleneck	23/28	Batanes emphasized sea and island logistics; Quirino emphasized road, flood, landslide, and distance constraints.
Safeguarding required contact through referral closure	19/28	Class resumption alone did not show that an at-risk learner was safe, supported, or re-engaged.
Trust accelerated action but required documentation	20/28	Community ties helped mobilization, while informal data sharing and undocumented decisions created risk.
Inclusion and well-being remained least operationalized	21/28	Disability adaptations, MHPSS, learner voice, and staff workload safeguards were recurrent gaps.

4.6 Mixed-methods integration

Integration produced four principal meta-inferences. First, high planning scores did not guarantee operational continuity; Batanes's planning advantage coexisted with a large flexible-learning disadvantage. The qualitative explanation was a conversion gap between knowing the hazard and maintaining redundant materials, routes, spaces, and contact when mobility failed. Second, the adjusted access penalty converged with geography-specific profile bottlenecks, indicating that last-mile design should be assessed directly rather than inferred from provincial boundaries. Third, the positive safeguarding, psychosocial, and coordination coefficients complemented the item-level gaps: each domain mattered, but the most child-centered processes were not yet the strongest. Fourth, the uncertain adjusted province effect indicated that common operating standards could coexist with differentiated logistical annexes. These inferences were translated into the CHILD-FIRST Learning Continuity Protocol. The protocol did not propose a new council. It organized ten operational commitments that could be assigned through existing school DRRM teams, child-protection committees, local DRRM councils and offices, health and social-welfare units, DepEd division structures, police or other authorized responders when required, parent groups, and community organizations. Each commitment was designed to leave verifiable evidence without creating unnecessary personal-data collection.

Table 8. Integrated CHILD-FIRST Learning Continuity Protocol

Commitment	Minimum action	Verifiable evidence
C — Command and activation clarity	Named triggers, authority, alternates, and accountability windows	Approved trigger matrix and contact tree
H — Hazard and learner-risk mapping	Map hazards together with access, disability, protection, and contact vulnerabilities	Current risk-and-access map with protected learner list
I — Inclusive safeguarding and psychosocial care	Provide accessible arrangements, safe disclosure, screening, and authorized referral	Accessibility checklist and de-identified referral status log
L — Low-tech and logistics redundancy	Maintain print, offline, radio/SMS, alternative-space, and transport fallbacks	Modality and route redundancy matrix
D — Data minimization and referral closure	Share only necessary information and confirm receipt, action, and safe closure	Role-based protocol and closure confirmation

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Commitment	Minimum action	Verifiable evidence
F — Family and learner communication	Use two-way, accessible, culturally responsive messages and feedback routes	Tested message cascade and feedback record
I — Interagency resource agreements	Pre-authorize transport, space, supplies, health, welfare, and protection support	Signed or formally recorded resource commitments
R — Rapid contact, recovery, and re-engagement	Account for learners, prioritize those unreachable, and monitor return	Time-stamped contact and re-engagement dashboard
S — Simulation, staff capability, and well-being	Exercise continuity scenarios and protect staff workload and safety	After-action report and staff support plan
T — Tracking, review, and plan revision	Monitor access, safety, contact, referral closure, participation, and learning	Minimum indicator set and revision log

Note. The protocol was a research-derived implementation framework, not an issued DepEd policy. Protected learner information should never appear on public dashboards or unrestricted coordination records.

5. Discussion

5.1 Principal findings

The study produced a differentiated account of safe learning continuity in two small Philippine provinces. Coordination and risk-informed operations appeared comparatively established, but psychosocial inclusion, accessible adaptation, offline backup, staff well-being, and alternative-space readiness lagged. Batanes's stronger planning score and weaker flexible-learning score formed the most important comparative result. The combination suggested that hazard awareness and formal preparedness could coexist with practical fragility when materials, routes, telecommunications, or alternative spaces lacked redundancy. Quirino's advantage in flexible learning did not eliminate its own safeguarding and inclusion gaps. The evidence therefore favored profile-based improvement rather than a uniform intervention or provincial league table.

The data clarified that continuity was most strongly associated with flexible-learning and resource readiness. The coefficient did not mean that modality provision mattered more than child protection in ethical terms. It indicated that, within the specified study, reliable means of maintaining access and contact explained the largest independent share of variation. Child safeguarding, psychosocial inclusion, and coordination also retained positive associations, demonstrating that access without protection, referral, and support was incomplete. Risk-informed planning did not retain an independent association after the other domains were included, which was consistent with an implementation-chain interpretation: plans had value when they activated resources, safe arrangements, referrals, and communication.

The access-constrained coefficient was more informative than the adjusted province indicator. It suggested that an operational characteristic—difficulty moving people, information, or materials—cut across administrative labels. This distinction mattered for resource allocation. Province-wide averages could mask a central school with robust connectivity and a remote or island-dependent cluster whose continuity failed at the last mile.

5.2 Interpretation in relation to prior evidence

The findings aligned with the international standards reviewed in the introduction. INEE and the Comprehensive School Safety Framework had both treated safe learning as a system of access, protection, participation, management, and resilience rather than a single educational product [1,2]. The present domain structure operationalized that systems view. Its lowest items showed where broad standards could lose force in implementation: disability access could be acknowledged without being built into materials and spaces; a referral pathway could exist without confidential sharing or verified closure; and a learning mode could be named without a viable route, power source, device, or contact schedule.

The flexible-learning result also extended pandemic-era Philippine evidence. Barrot and colleagues had identified interlocking technological, environmental, and personal barriers among learners [25], while Agaton and Cueto had documented substantial burdens transferred to families [26]. The current study treated those barriers as design conditions rather than learner deficits. Redundancy meant that failure of one channel did not terminate contact: printed material was paired with scheduled feedback; offline content had a device or access plan; an alternative space had been pre-cleared for safety and accessibility; and transport agreements identified a backup route or weather trigger. This logic was especially relevant to Batanes, where a digital-only response could fail with telecommunications disruption and a print-only response could fail with inter-island delay.

The psychosocial and inclusion gaps were consistent with developmental evidence that children's disaster responses varied and were shaped by supportive relationships, routines, and service systems [28]. They also underscored the limits of short, stand-alone psychosocial activities. The response chain needed staff capable of psychological first aid, clear thresholds for specialized referral, accessible and culturally responsive support, caregiver communication, and follow-through. Staff well-being was part of this system: exhausted or displaced personnel could not be assumed to sustain contact, documentation, instruction, and referral work indefinitely. The qualitative patterns also supported collaborative-governance research. Shared motivation and local trust enabled rapid action, but joint capacity depended on formalized roles, resources, and information arrangements [32]. The recurring tension between participation and efficiency described in network-governance scholarship [34] was visible in emergency decisions: a broad coalition strengthened legitimacy and local knowledge, while an incident still required a clearly authorized lead, escalation route, and time-

bound decision. The proposed protocol responded by separating standing participation in planning and review from incident-specific command and case-level confidentiality.

5.3 Implications for Quirino

For Quirino, the priority was to connect relatively stronger flexible-learning readiness to risk-specific last-mile plans. School and municipal teams should have pre-identified road segments, river crossings, flood- or landslide-sensitive routes, alternative pickup points, and households likely to become temporarily unreachable. A route-status protocol could assign who verified passability, who authorized a change, and how families received the same message. Printed learning reserves should have been decentralized where feasible so that a single blocked route did not isolate an entire cluster.

Quirino's plan should also have integrated education, social welfare, health, DRRM, and protection functions at the municipal level. A learner who missed contact because of displacement, injury, caregiving, livelihood pressure, or protection risk required different action from a learner whose module had merely been delayed. A tiered contact protocol could separate routine nonresponse, priority follow-up, and urgent safeguarding referral. Community representatives could support location and communication while receiving only the minimum information necessary for their role.

5.4 Implications for Batanes

For Batanes, the gap called for an island-aware continuity annex. Plans should have identified minimum stocks of print and offline content, resupply lead times, safe storage locations, device-charging options, telecommunications backups, and transport contingencies for each island-dependent cluster. Weather windows and suspension decisions should have triggered early positioning of materials rather than reactive distribution after routes closed. Local content caches and teacher-prepared feedback schedules could reduce dependence on continuous internet access.

Inter-island coordination also required explicit handoffs. A resource or referral plan was incomplete if it ended when an item, message, or case left one office. Named sending and receiving roles, confirmation procedures, privacy rules, and escalation times were needed. Health and social-welfare pathways should have anticipated delayed travel and clarified what interim support could safely be delivered locally. For urgent protection situations, authorized responders should have followed child-sensitive procedures and avoided broad disclosure through community or group messaging.

5.5 Cross-provincial implementation agenda

Both provinces would have benefited from a common minimum indicator set with local logistical annexes. The common core should have tracked: proportion of learners contacted within the agreed window; proportion with a safe and accessible learning arrangement; continuity of two-way teacher contact; status of priority learners; referral receipt and closure; staff availability and workload; material stocks; route or connectivity status; participation after reopening; and unresolved barriers by disability, location, or other relevant equity dimension. Indicator definitions should have been agreed before an emergency so that agencies did not report incompatible counts.

Data governance was essential. Public dashboards could report aggregate contact, access, and service-restoration indicators, but names, case details, disability status, protection allegations, and exact household locations should have remained in restricted systems. Role-based access, secure transmission, defined retention, and a documented legal basis were needed. Community volunteers and partner agencies should have received only the information required for a specific task. Referral closure should have been represented by a minimal status code rather than sensitive narrative details in a coordination spreadsheet.

Financing should have followed continuity functions rather than stand-alone purchases. An offline platform without charging, accessible content, training, and feedback was not a continuity system. Likewise, an alternative space without safety inspection, WASH, accessibility, child-protection supervision, and transport planning merely relocated risk. Local budgets and school plans should therefore have bundled resource, capability, maintenance, and exercise costs. Pre-arranged agreements could specify whether an LGU, school, health unit, social-welfare office, responder, telecommunications provider, transport group, or civil-society partner supplied each function and under what activation condition.

Learner and caregiver participation should have been institutionalized before the emergency. Their input could identify unsafe routes, inaccessible materials, language barriers, household schedules, fear of disclosure, or impractical contact windows that administrators might miss. Participation did not transfer adult safeguarding responsibility to children. It improved design while schools and agencies retained the duty to act safely, document decisions, and provide accessible channels for feedback and complaints.

6. Conclusion

The comparative study showed that safe learning continuity depended on converting preparedness into a complete operational chain: activate, account for learners, maintain an accessible learning arrangement, sustain two-way contact, detect and refer risk, support psychosocial recovery, and monitor re-engagement. Quirino and Batanes shared that child-first standard, but their logistics differed. Quirino required stronger integration of dispersed inland access and route disruption into municipal continuity planning. Batanes required deeper redundancy for inter-island materials, communications, transport, and service handoffs.

The results did not support declaring one province more prepared than the other. Batanes's advantage in risk-informed planning coexisted with a flexible-learning disadvantage, and the adjusted province effect was uncertain. Access constraint, modality readiness, safeguarding, psychosocial inclusion, and coordination were more actionable than a provincial label. The CHILD-FIRST protocol captured this conclusion through ten commitments that could be embedded in existing school and local-government structures.

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