

School and Teachers' Preparedness and Instructional Time During the Pandemic on Students' Learning Outcomes

Wilbert A. Villaflor Ph.D.¹

¹Instructor, Bulacan Agricultural State College, San Ildefonso, Bulacan, Philippines

Corresponding Author's Email: wilbertvillaflor@gmail.com



ABSTRACT

This study investigates school and teacher preparedness, instructional time, and student learning outcomes during the COVID-19 pandemic to identify predictors of educational resilience and system readiness for future disruptions. Using a descriptive-correlational mixed-methods design, data were collected from 156 public school teachers across small, medium, and large schools in the School Division of Bulacan, Philippines. Quantitative data were gathered through validated survey instruments and analyzed using descriptive statistics, Pearson's r , and Chi-square tests, while qualitative data from interviews and focus group discussions were thematically analyzed. Findings indicate that curriculum content, learning environment, professional development, community linkages, webinar participation, technological competency, and instructional materials were rated very high and showed significant positive relationships with student learning outcomes. Instructional time was not significantly associated with achievement. Qualitative results revealed challenges related to connectivity, assessment authenticity, learner motivation, and social isolation, alongside coping strategies grounded in flexible learning, parental engagement, psychosocial support, and community collaboration. The study concludes that institutional and teacher preparedness, supported by resilience-oriented practices, is a stronger determinant of learning continuity than instructional time alone. These findings underscore the need to embed preparedness and resilience frameworks into post-pandemic education policy and practice.

Keywords: preparedness, instructional time, learning outcomes, distance learning, Bulacan, COVID-19

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INTRODUCTION

When COVID-19 spread, and community quarantines became mandatory in the Philippines, educators swiftly confronted questions about the future of schooling and the government’s capacity—and resolve—to sustain learning (Tria, 2020). Long-standing issues already burdened the system: limited facilities, scarce learning materials, an overworked and underpaid teaching force, and a curriculum due for reform. Together, these constraints magnified the shock of the pandemic.

The crisis strained schools and revealed gaps in readiness. Unlike countries with stronger financing and tighter institutional coordination, Philippine schools struggled to maintain quality while lockdowns endured (Tria, 2020). School closures disrupted routine instruction nationwide; students pivoted to remote modalities—internet, television, and radio—while teachers adopted unfamiliar approaches and tools, often without sufficient preparation (Schleicher, 2020). Marginalized learners, lacking devices, connectivity, or independent study skills, fell behind at greater rates.

Distance learning offered a path forward, yet implementation exposed a different bottleneck: modules were unavailable or slow to reach households, especially across rural divisions like Bulacan. Government funds—₱22 billion for reproduction in 2021—did not meet the estimated ₱50 billion requirement, widening access gaps (Hernando-Malipot, 2021). These shortfalls demanded durable solutions that prioritize timely resources for learners and allow teachers to invest energy in planning, guidance, and professional growth.

This study responds to those challenges within Bulacan’s school division by collaborating with educators to strengthen instructional quality. Preparedness—now embedded in curricula—remains multifaceted, spanning disasters, public health emergencies, and other shocks; schools, therefore, must tailor preparedness goals to the realities of a pandemic (Tria, 2020). The pandemic also forced reductions in instructional hours, even as schools continued to meet content standards. To bridge this gap, we propose embedding preparedness competencies that equip learners to navigate disruption and recover quickly (Tan et al., 2025).

A “new normal” curriculum can integrate concepts across subjects to conserve time while protecting essential learning. Educators may draw on multiple integration approaches to merge skills and content efficiently and maintain coherence despite constraints. By applying these models deliberately, schools can streamline coverage, sustain engagement, and support equitable outcomes even when schedules shorten.

With that, this research aims to contribute to addressing the learning challenges within schools during the pandemic and beyond. By emphasizing preparedness competencies and strategic curriculum integration, educators can better prepare students for an ever-evolving educational landscape..

Research Questions

1. How may school pandemic preparedness be described in terms of:
 - 1.1 Curriculum Content;
 - 1.2 Learning Environment;
 - 1.3 Professional Development ;
 - 1.4 Community Linkages?

2. How may the school’s personnel pandemic preparedness be described in terms of:
 - 2.1 Webinar Trainings;



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- 2.2 Technological Competency
- 2.3 Instructional Materials?
- 3. How may the instructional time be described in terms of:
 - 3.1 Teacher's Instructional Time;
 - 3.2 Student's Activity Time?
- 4. How may the student learning outcome be described in terms of:
 - 4.1 Written Work
 - 4.2 Performance Task?
- 5. Is there a significant relationship between a school's pandemic preparedness and learning outcomes?
- 6. Is there a significant relationship between school personnel pandemic preparedness and learning outcomes?
- 7. Is there a significant relationship between instructional time and learning outcomes?
- 8. What are the challenges encountered by the school, teachers, and students during the pandemic?
- 9. What coping mechanisms will be used to address the challenges encountered by the school, teachers, and students during the pandemic?

METHODS

The study utilized a descriptive mixed-methods approach to examine the relationship between instructional time, teacher preparedness, and student learning outcomes during the COVID-19 pandemic. By combining quantitative surveys with qualitative interviews and focus group discussions (FGDs), the researchers captured both measurable trends and contextual insights. This correlational design allowed the researcher to identify associations among variables without manipulating conditions.

Participants included public school teachers from four districts within Bulacan's School Division. For the quantitative phase, the researchers distributed Google Forms to 532 teachers, while the qualitative phase involved selected school personnel in online interviews and FGDs. Each discussion group consisted of 6–12 participants, creating an environment conducive to open dialogue and detailed response.

Standardized questionnaires assessed nine domains relevant to pandemic education: curriculum adjustments, learning environment, professional development, community linkages, webinar participation, technological competence, instructional materials, written work, and performance tasks. These instruments ensured consistency and comparability across responses.

During this research, a non-probability convenience sampling method was chosen due to the restrictions imposed during the COVID-19 pandemic, which prevented face-to-face data collection. To conduct the survey, Google Forms was employed, and the survey link was sent to designated focal persons in each school. These focal persons then shared the link within their respective group chats, making it accessible to all teachers.

For qualitative data, semi-structured guides directed interviews and FGDs conducted via Zoom and Google Meet. These guides encouraged participants to share experiences, challenges, and coping strategies. All sessions were transcribed and analyzed for recurring themes.



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Data collection occurred in two phases. First, surveys were distributed online to gather quantitative data on preparedness and learning outcomes. Second, interviews and FGDs were conducted virtually to capture deeper perspectives. This remote approach adhered to health protocols while maintaining research continuity.

Quantitative data were summarized using descriptive statistics, including frequency, mean, median, and standard deviation. Relationships among variables were tested using Pearson’s r at a significance level of $p < .05$, while categorical and rank-based associations were examined through Chi-Square tests and Spearman’s rho. Qualitative data underwent thematic analysis, identifying patterns related to challenges and coping mechanisms.

Table 1. Variables Descriptive Scales

| School Pandemic Preparedness, Personnel Pandemic Preparedness Instructional Time and Learning Outcome | | |
|--|--------------|--------------------|
| Weight | Scale | Description |
| 5 | 4.22 - 5.00 | Very High |
| 4 | 3.42 - 4.21 | High |
| 3 | 2.62 - 3.41 | Moderate |
| 2 | 1.81 - 2.61 | Low |
| 1 | 1.00 - 1.80 | Very Low |

Table 1 provides descriptions of the level of instructional time, students' learning and school and personnel preparedness for the pandemic and beyond. The measurement of quantitative data was made possible using the verbal descriptive scale with a 1 to 5 weighted mean score (1 very low and 5= very high) for the interpretation of statistically relevant variable output.

RESULTS

Table 2. School Pandemic Preparedness (Mean by Dimension)

| Dimension | Mean | Description |
|--------------------------|-------------|--------------------|
| Curriculum Content | 4.41 | Strongly Agree |
| Learning Environment | 4.27 | Strongly Agree |
| Professional Development | 4.38 | Strongly Agree |
| Community Linkages | 4.30 | Strongly Agree |

The analysis shows that schools demonstrated strong preparedness in several areas during the pandemic:

Curriculum Content: Overall mean of 4.41 (Very High), This suggests schools were well-prepared, though challenges for marginalized learners persisted (e.g., poor internet, limited resources).



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Learning Environment: Mean of 4.27 (Very High), with strong agreement that distance learning was suitable and face-to-face teaching remained important. Connectivity issues were noted as a challenge.

Professional Development: Mean of 4.38 (Very High), showing teachers benefited from webinars and training, though creating social media channels scored lowest (4.06).

Community Linkages: Mean of 4.30 (Very High), highlighting strong community support for online learning, parental engagement, and crisis management activities.

Overall, these findings suggest schools and teachers were highly prepared in curriculum, environment, professional development, and community support during the pandemic.

Table 3. Teacher Pandemic Preparedness (Mean by Dimension)

| Dimension | Mean | Description |
|--------------------------|-------|----------------|
| Webinar Participation | 4.614 | Strongly Agree |
| Technological Competency | 4.28 | Strongly Agree |
| Instructional Materials | 4.40 | Strongly Agree |

Webinar Participation: Teachers strongly agreed on the effectiveness of webinars, with an overall mean of 4.614. Despite prior training, interviews revealed teachers still struggled with delivering assignments during remote learning.

Technological Competency: Teachers demonstrated strong technological skills, with an overall mean of 4.28. Findings emphasize the need for teachers to be tech-savvy from the start of their careers.

Instructional Materials: Schools showed high preparedness in providing instructional resources, with an overall mean of 4.40. Results highlight the importance of accessible and varied materials for effective remote learning.

Table 4 . Instructional Time (Mean)

| Indicator | Mean | Description |
|----------------------------|------|----------------|
| Teacher Instructional Time | 4.34 | Strongly Agree |
| Student Activity Time | 4.00 | Agree |

Teachers demonstrated strong preparedness during the pandemic, with an overall mean of 4.34 (Strongly Agree). This suggests effective time management and teacher support were evident, aligning with studies emphasizing the importance of efficient use of instructional time for successful learning outcomes.

Students' activity time had an overall mean of 4.00 (Agree). Findings indicate that while flexibility and support were present, there is a need to improve strategies for deeper learning. Interviews revealed challenges such as unfamiliarity with new systems, difficulty understanding lessons, lack of examples, and limited access to technology.



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Table 5. Correlations: School Pandemic Preparedness vs Learning Outcomes

| School's Pandemic Preparedness | Learning Outcome | Pearson r | p-value | Interpretation |
|--------------------------------|------------------|-----------|---------|----------------|
| Curriculum | Written Works | .277 | .000 | Significant |
| Content | Performance Task | .725 | .000 | Significant |
| Learning Environment | Written Works | .651 | .000 | Significant |
| Professional Development | Performance Task | .190 | .018 | Significant |
| Community Linkages | Written Works | .277 | .000 | Significant |
| | Performance Task | .760 | .000 | Significant |
| | Written Works | .194 | .015 | Significant |
| | Performance Task | .704 | .000 | Significant |

Table 5 presents the correlation between the School's Pandemic Preparedness and Learning Outcomes in terms of Written Works and Performance. Pearson's-r correlation coefficient was used to determine the significant relationships between School's Pandemic Preparedness dimensions and the learning outcome of the respondents.

The results revealed that the computed p-value for School Pandemic Preparedness through Curriculum Content, Learning Environment, Professional Development, and Community Linkages in relation to student learning outcome in written works and performance tasks are all less than 0.05, which is interpreted as significant correlation between the two variables.

Curriculum content, learning environment, professional development, and community linkages all showed significant correlations with written works and performance tasks ($p < 0.05$). This led to rejecting the hypothesis that no relationship exists. Findings emphasize that accessible instructional materials, conducive environments, and community support enhance learning during crises.

The findings implied that Learning Outcomes are significantly associated with School/Personnel Pandemic Readiness. Interestingly, the findings also agreed with most recent studies conducted during the pandemic that instructional materials must be appropriate and accessible, the learning environment must be conducive to children, and community support for learners must be immediately accessible to enhance learning and motivate students to learn for themselves despite the world is in the middle of a great health crisis (UNESCO, 2020).

Table 6. Correlation between Teacher's Pandemic Preparedness and Written Works and Performance Task

| Teacher's Pandemic Preparedness | Learning Outcome | Pearson r | p-value | Interpretation |
|---------------------------------|------------------|-----------|---------|----------------|
| Webinar | Written Works | .252 | .002 | Significant |
| Trainings | Performance Task | .728 | .000 | Significant |
| Technological Competency | Written Works | .432 | .000 | Significant |
| | Performance Task | .989 | .000 | Significant |
| Instructional Materials | Written Works | .503 | .000 | Significant |
| | Performance Task | .645 | .000 | Significant |



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Table 6 presents the correlation between School Personnel’s Pandemic Preparedness and Learning Outcomes in terms of Written work and Performance. Pearson r correlation coefficient was used to determine the significant relationships between School’s Pandemic Preparedness dimensions and learning outcomes of the respondents.

The results revealed that the computed p-value for the School Personnel’s Pandemic Preparedness in terms of Webinar Trainings, Technological Competency, and Instructional Material in relation to student learning outcomes in written works and performance tasks are all less than 0.05, which is interpreted with significant correlation between the two variables.

Teacher Pandemic Preparedness in terms of Webinar trainings, technological competency, and instructional materials were all significantly related to learning outcomes ($p < 0.05$). This indicates that teacher readiness strongly influences student performance.

The study found **significant relationships** between pandemic preparedness and student learning outcomes:

Table 7. Correlation between School and Teachers’ Pandemic Preparedness and Instructional Time

| | Learning Outcome | Pearson r | p-value | Interpretation |
|------------------------------|--------------------|-----------|---------|-----------------|
| Teacher’s Instructional Time | Written Works | .031 | .768 | Not significant |
| | Performance Task | .070 | .502 | Not significant |
| Student Activity Time | Written Works | .037 | .721 | Not significant |
| | Instructional Time | .146 | .162 | Not significant |

There is no significant relationship that was found between instructional time (teacher or student activity) and learning outcomes. The hypothesis of no correlation was accepted, suggesting that simply increasing time does not guarantee improved achievement; effective use of time matters more.

Overall, the results highlight that preparedness—both institutional and teacher-level—has a stronger impact on learning outcomes than instructional time alone.

Qualitative Results

This section examines how students, teachers, and schools navigated the challenges of the COVID-19 pandemic and the coping strategies they adopted to manage its impact. Students leaned toward modular learning for its flexibility, yet many struggled with overwhelming lesson loads, limited social interaction, and poor internet connectivity that made online learning difficult. Elementary pupils depended heavily on parents to maintain routines and complete modules, while modular learners often fell behind due to the sheer volume of tasks. Teachers faced their own hurdles—chief among them, ensuring authentic assessment of learning outcomes and sustaining meaningful relationships with students. Despite training from DepEd and efforts to adapt through webinars, module development, and health protocol compliance, inconsistencies between local and national guidelines added confusion. To cope, both students and educators turned to practical and personal strategies: maintaining social



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connections, creating self-care plans, seeking emotional support, and engaging in spiritual practices such as prayer and meditation. Acceptance and adaptability emerged as vital for resilience, yet findings revealed that those most in need of emotional and social support were least likely to employ positive reframing or acceptance. These insights underscore the importance of strong family ties and social networks in buffering stress and promoting mental health during prolonged remote learning.

CONCLUSION

Recommendations for Future Research

Future studies should disaggregate instructional time into components such as engaged learning time, feedback cycles, and modality-specific interactions. Rather than focusing on nominal hours, researchers need to examine time-on-task, synchronous and asynchronous participation, and the cadence of teacher feedback, as well as the quality of interaction across delivery modes. These refinements are critical given the widespread loss of in-school time and uneven digital readiness observed during school closures (OECD analyses).

Researchers should also model multilevel determinants of learning outcomes, considering school-level preparedness, teacher competencies, learner access and motivation, and community support. This approach aligns with policy guidance in DepEd's Basic Education Learning Continuity Plan, which emphasizes curriculum streamlining, modality deployment, and assessment adaptation.

Another priority is to investigate equity and access mechanisms in low-resource contexts. Studies should quantify how connectivity, device availability, and household responsibilities influence learning, particularly among disadvantaged groups, as global monitoring consistently reports disproportionate impacts during emergency remote education.

Professional learning that strengthens assessment integrity across modalities warrants rigorous evaluation. Trials should test strategies such as performance tasks with verification protocols and structured feedback cycles to ensure validity in online, modular, and blended environments.

Further research should explore technology competence and webinar engagement as mediators of student performance. Identifying threshold levels of proficiency that lead to meaningful gains will inform teacher development programs.

Longitudinal studies are needed to track post-pandemic recovery trajectories, examining the persistence of blended practices and institutional innovations adopted during the crisis. These investigations will reveal which strategies sustain learning outcomes as systems normalize.

Finally, scholars should contextualize preparedness competencies within localized curricula. Co-designing and validating skills such as health literacy, crisis navigation, and digital resilience—and embedding them into curriculum frameworks—can enhance engagement and achievement during future disruptions.



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