Indigenous Peoples and the COVID-19 Pandemic: Learning, Preparedness, Challenges and the Way Forward

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Abstract

The United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), in 2007 and the Philippines' Indigenous Peoples Rights Act (1997) both recognize that access to education is a key component of Indigenous self-determination. Rushed responses in the early onset of the COVID-19 pandemic have, however, illuminated the tensions between contemporary statecraft and these ostensibly inalienable human rights. Employing quantitative and qualitative research methods, this study assesses the degree to which Indigenous Peoples (IPs) and Indigenous Cultural Communities (ICCs) in the Nueva Ecija region of the Philippines considered themselves prepared for the technologically dependent learning modalities that dominate the post-COVID educational landscape. While we recommend that government bodies and educational institutions work with IPs/ICCs to address longstanding inequalities, we also draw attention to how Indigenous knowledge contains key insights into contending with ongoing and future pandemics along with other existential crises of universal concern.

Keywords: Indigenous education, higher education, COVID-19, Philippines

Introduction

> *"The absence of a stable signal in our place obliges us to go to the mountains in hopes of getting a good one for our online class."* (Jamaican student participant)

[1] Dr. Arneil Gabriel, who made significant contributions to researching and writing this article, passed away in August 2022.

This study examines the degree to which Indigenous Peoples and Indigenous Cultural Communities (IPs/ICCs) in the Philippines perceive themselves to be prepared for COVID-19 responsive distance learning modalities. In response to the rapid spread of the pandemic and the risk of in-person meetings, academic institutions worldwide replaced face-to-face classes with online learning to ensure the continuity of schooling (Daniel, 2020). The use of internet-based applications, commonly in the form of video conferencing and learning management systems, have since become ubiquitous. But the high degree of structural and financial resources needed to access these technologies prevent students from minoritized communities from fully engaging with online learning.

Indigenous Peoples are among the most besieged and targeted communities in the Philippines (Valdeavilla, 2018). The terms IP and ICC have specific political definitions in the Philippines: they refer to small ethnolinguistic nations that are mostly located in remote areas, such as the Dumagat, Ifugao, Bontoc, and Kankana-ey peoples of Luzon, the Ati of the Visayas, and the Lumad of Mindanao. IPs/ICCs are also defined by their historical resistance to outside influences, such as Spanish, American, and Japanese colonizers. This characterization is contrasted with majority ethnic groups like the Tagalog, Ilocanos, and Bisaya, who are indigenous to the Philippines but are thought to have assimilated Western influences, like Catholicism and Western beauty standards. These characterizations, while ahistorical and not wholly accurate (Rafael, 2015), perpetuate the idea that IPs are intrinsically different from 'mainstream Filipinos' (Eder, 2013). This distinction breeds discrimination: IPs/ICCs are routinely excluded from political, economic, educational, and cultural decision-making processes, even when these processes have severe implications for Indigenous lands and lifeways (Chavez, 2019). Indigenous communities also safeguard much of the Philippines' ecological diversity, which makes them frequent targets of development aggression and state violence in pursuit of exploiting 'natural resources' (Paredes, 2013). Despite these inequities, IPs are guaranteed the rights to self-determination, cultural survival, sovereignty, and equitable education under Philippine and international law. Because education is integral to Indigenous self-determination, the question of whether IPs/ICCs are prepared for pandemic-responsive schooling should be understood as a pressing issue of Indigenous rights.

We examine this issue by uplifting the perspectives of Indigenous students and their parents during the COVID-19 pandemic. In **Section 1**, we foreground this study in a discussion of the response to COVID-19 in the Philippines, and the ways the pandemic is inequitably affecting Indigenous Peoples. **Section 2** presents the study's analytical framework, alongside demographic information. **Section 3** discusses quantitative and qualitative findings that illustrate how Indigenous students and parents face compounding challenges accessing and preparing for online learning. We frame this discussion in terms of the psychosocial, economic, technological, and socio-cultural dimensions of preparedness, which shows how IPs/ICCs perceive themselves to be prepared in some ways and underprepared in others. **Section 4** concludes this study with recommendations on how distance learning modalities can be improved to ensure educational justice and equitable outcomes for Indigenous Peoples.

Section 1: The Response to COVID-19 in the Philippines and the Historical Context of Indigenous Peoples

As part of the Philippines' early response to COVID-19, the Duterte administration allotted 3.7 billion pesos ($73 million US dollars) to the Department of Education, with the goal of improving online learning technology nationwide (The Manila Times, 2021). Despite this significant investment, the degree to which Indigenous students benefitted from the government's support remains questionable. Indigenous Peoples have historically been marginalized in mainstream educational institutions in the Philippines, which afford them few opportunities to use their own languages, epistemologies, and practices (Eduardo & Gabriel, 2021). The shift from in-person instruction to distance learning added to these stressors, as it forced students from ICCs to develop skills in digital literacy with minimal support (Bayod, 2020). IPs were disadvantaged in preparing for the *old* modalities; they must now add digital preparedness to a list of long-standing barriers to educational access. These barriers include geographical isolation, a lack of telecommunications infrastructure in tribal areas, the use of an unfamiliar language (English) as the mode of instruction, and systemic discrimination against Indigenous Peoples (Pawilen, 2016; Eduardo & Gabriel, 2021). This combination of new and old stressors compromised the equitable delivery of online options to many of the Philippines' Indigenous learners. Assuring that IPs are prepared for distance learning will thus require increased access to funding and resources, along with concerted efforts to honor the rights of Indigenous Peoples.

Indigenous Peoples hold unique cultural, social, political, and philosophical knowledge that they have protected despite the Philippines' colonial history. Indigenous languages, knowledge systems, practices, and beliefs are anchored in a special relationship with their ancestral domains, or the lands on which their nations have stood since time immemorial (Gabriel, 2017; Gabriel & Mangahas, 2017; Tamayo & Camaya, 2018; Gabriel et al., 2020). For IPs, education emerges naturally out of life. Teaching and learning are transformative processes that enable young people to learn traditional knowledge while updating it to address contemporary problems. Indigenous education seeks wholeness, balance, and harmony between individuals, communities, and environments (Cajete, 2018). It therefore differs from the mainstream Philippine education system's overarching concern with modernization, human capital development, and nationalism (Gabriel, 2017; Romero, 2020). Still, IPs in the Philippines see value in both Indigenous and institutional forms of learning. University studies, in particular, are viewed as crucial to the betterment of ICCs (Adonis & Couch, 2017).

The right to education is enshrined in the Philippines' Indigenous Peoples Rights Act (IPRA), which mandates that the State:

> *"…take measures, with the participation of the ICCs/IPs concerned, to protect their rights and guarantee respect for their cultural integrity, and to ensure that members of the ICCs/IPs benefit on an equal footing from the rights and opportunities which national laws and regulations grant to other members of the population".* (Section 1, Subparagraph e, 1997)

Both IPRA and the United Nations Declaration on the Rights of Indigenous People also guarantee the right to self-determination, or the ability of Indigenous People to "freely determine their political status and freely pursue their economic, social and cultural development" (UNDRIP, Art. 4, 2007). Educational initiatives that honor IPRA, including those that impose distance learning modalities as a pandemic-responsive safety measure, should therefore seek the consultation of Indigenous Peoples. They should further consider the tenets of Indigenous education by promoting equity, self-determination, and harmonious relationships between individuals, land, and community (McKinley, Brayboy & Bang, 2019; Dziuban, et al., 2018).

Section 2: Analytical Considerations

Our understanding of how IPs/ICCs are engaging with distance learning modalities and coping with the pandemic is informed by the concept of adaptive capacity. Janssen, Schoon, Ke, and Borner (2006) define adaptive capacity as the ability of organizations, and individuals to cope with traumatic circumstances. This ability depends on three behavioral dimensions:

- *adaptation* refers to practices undertaken in response to change that seek to mitigate or nullify the negative effects of that change.
- *resilience* refers to the ability to persist, or continue existing, amidst changes.
- *vulnerability* refers to the ability to anticipate dangerous situations, which enables people to plan for and recover from traumatic events when they occur.

Historical accounts suggest that the Indigenous Peoples of the Philippines exhibit a high degree of adaptive capacity, especially during pandemics. Some Cordilleran nations practice a form of self-isolation and quarantine called *ngilin*. During plagues and in times of crisis, *ngilin* "…drive[s] away bad spirits causing the disease while preventing transmission" (Smith-Morris, 2020, p. 4). Recent research suggests that the Ifugao of Northern Luzon built the Banaue rice terraces around 400 years ago as an exercise of adaptive capacity: they helped the Ifugao defend themselves against Spanish soldiers, priests, and pathogens (Acabado, Koller, Liu, Lauer, Farahani, Barretto-Tesoro, Reyes, Martin & Peterson, 2019). Carved into remote mountainsides, the terraces also allowed the Ifugao to control their food supply, avoid paying tribute to Spain, and ensure their culture's continued survival. Adaptive capacity can thus be understood as an integral tenet of Indigenous sovereignty in the Philippines. Another key component of Indigenous self-determination, according to IPs themselves, is education (Adonis & Couch, 2017). Inaccessible learning paradigms that exclude Indigenous Peoples might therefore be interpreted as threats to the human rights of Indigenous self-determination, sovereignty, and liberation.

Methodology

This study draws from surveys, focus groups, and quantitative analysis of coded data to collect and provisionally consider how Indigenous learners perceived themselves to be prepared for online instruction. The unprecedented nature of the COVID-19 pandemic compelled the researchers to ask a variety of questions designed to create a comprehensive pictures of students' experiences with online instruction. This process yielded a custom-made questionnaire which consisted of multiple-choice questions measured on a four-point Likert scale. Ancillary focus group discussions were convened to contextualize the survey responses. The scaling is presented below:

Table 1: ***Likert Scaling for Range of Values and Interpretation***

Range	Interpretation
1.00-1.75	Disagree (D)
1.76-2.50	Slightly Disagree (SD)
2.51-3.25	Agree (A)
3.26-4.0	Strongly Agree (A)

Survey questions were designed to assess respondents' perceptions of their own psychosocial, economic, technological, and socio-cultural preparedness for online education. Multiple questions were assigned to these dimensions to ensure accurate item loading and that participants would accurately convey their perceptions by answering related questions in a similar fashion. Participants were recruited through snowball sampling: a preliminary group of respondents was initially recruited through the researchers' personal and professional networks, who then helped to identify other respondents. Recruitment continued until the field grew to 122 respondents. At that point, data saturation was observed among their responses.

Psychosocial, economic, technological, and socio-cultural preparedness are constructs determined by the mean scores of responses to related clusters of survey questions. A Pearson Product-Moment Correlation analysis was used to determine if there were any observable relationships between various dimensions of respondents' demographic profiles and their perceived levels of preparedness. Analyses of these quantitative metrics inform recommendations for concrete strategies that honor the right of IPs/ICCs to equitable education in the Philippines.

Study Locale

The study was conducted with IPs/ICCs living in the province of Nueva Ecija, located in Central Luzon, roughly 130 kilometers from Manila. IPs/ICCs reside throughout the province, mostly in geographically isolated sitios that lack easy access to public transportation.

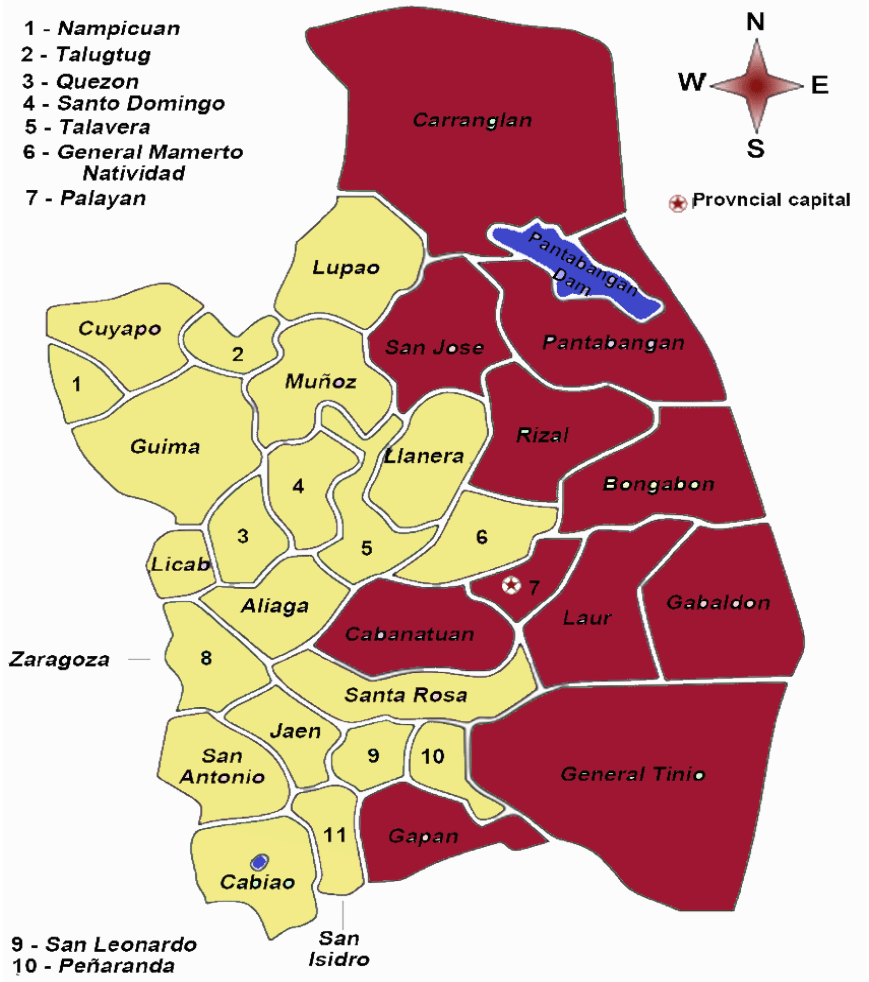

Figure 1. Study Locale

Profile of the Respondents

The 122 respondents came from eleven municipalities: Bongabon, Gabaldon, Gen. Tinio (Papaya), Laur, Carranglan, Pantabangan, Rizal, San Jose City, Cabanatuan City, Gapan City and Palayan City. Those who identified as students (n = 100, 82%) were enrolled in either high school or college during the 1st Semester of the Academic Year, 2020-2021. The parents of those students (n = 22, 18%) were asked to participate as they were thought to hold valuable knowledge about their family's learning experiences.

Among participating parents, 53.80% attended high school. One pursued a Master's degree while the remainder left school after elementary education. Parents' views on the value of education, however, reflected prior research which shows that IPs hold formal education in high regard (Gabriel, 2017). According to Gabriel (2017), IPs generally believe that advanced degrees enable them to pursue greater opportunities to earn incomes which benefit their communities. Nearly 87% of student respondents reported owning a smartphone. Students also affirmed previous studies which suggest that students are drawn to mobile technologies because they can

perform most computer functions required for education, professional life, and entertainment (Rajasekaran et al., 2018; Rice et al., 2016). A small but notable number (2.41%) of this study's respondents reported that they had no access to a mobile device.

Most of the participants who owned mobile devices reported accessing them daily. Some parents (10.30%) only used mobile technology to submit documents for their school-aged children. More than half of the students (54.20%) reported being enrolled in flexible learning modalities, which combine limited in-person instruction with distance learning. IPs/ICCs noted that they preferred this combination to online-only learning because unreliable internet access makes digital learning paradigms ineffective. More than half of all participants (51.64%) also belong to a household with 1 to 3 students enrolled in a school that has implemented a fully distance learning arrangement. These respondents also reported that their siblings enrolled in elementary school are mostly engaged in modular, online, or flexible learning. As such, students and parents understood the value of mobile technology, primarily because it has become a prerequisite for schooling. This understanding, however, does not mean that Indigenous families are well-positioned to derive the maximum benefits from online learning. The next section will explore how this discrepancy originates from structural barriers and systemic discrimination.

Section 3: Analyses of Psychosocial, Financial, Technological, and Socio-cultural Preparedness

Table 2: ***Perceptions of Financial, Technological, Psychosocial, and Socio-cultural Preparedness***

Item	Grand Mean (Students)	Grand Mean (Parents)
Financial Preparedness		
Availability of financial resources to support online learning	2.24	2.35
Mean (Financial Preparedness Score)	**2.24**	**2.35**

	Grand Mean (Students)	Grand Mean (Parents)
Technological Preparedness		
Readiness for synchronous/online classes	2.01	2.17
Readiness to use gadgets, computer programs, online platforms and services	2.91	2.79
Mean (Technological Preparedness Score)	**2.46**	**2.48**

	Grand Mean (Students)	Grand Mean (Parents)
Psychosocial Preparedness		
Acceptance of Distance Learning as the New Normal in Education	2.25	2.19
Positive Outlook on Coping with the Pandemic in General	2.63	2.68
Positive Attitude toward Independent Learning	2.62	2.37
Mean (Psychosocial Preparedness Score)	**2.50**	**2.41**

	Grand Mean (Students)	Grand Mean (Parents)
Socio-cultural Preparedness		
Support received from family members	2.71	2.68
Support received from external sources	1.70	1.82
Perception that English is inappropriate as primary language of instruction.	2.66	2.69
Situations affecting willingness to Study while on Distance Learning	2.86	2.75
Traditional beliefs and study habits	1.85	1.75
Mean (Socio-cultural Preparedness Score)	**2.36**	**2.34**

Financial Preparedness

Financial preparedness refers to the degree to which participants felt they could afford to fully take advantage of distance learning modalities. Online learning is an expensive undertaking, as the cost of devices, data, and electricity all combine to exert financial strain on Indigenous learners, who already come from some of the most socio-economically disadvantaged communities in the Philippines. Items measured to reflect the financial preparedness of IP students and their families produced mean scores of 2.24 for students and 2.35 for parents. These scores suggest that students and parents *slightly disagree* with the idea that they are financially prepared for online learning.

Participants report that they are often unable to acquire a device that is powerful enough to comply with online learning requirements. Users must also purchase mobile data, which is referred to in the Philippines as *load.* Parents were willing to purchase load to support their children's education, but they expressed concerns about their ability to do so over time. These responses suggest that digital preparedness can be fostered by increasing the level of financial and material resources afforded to Indigenous learners. Such considerations might take the form of stimulus payments to cover learning expenses or subsidized University fees (Lemos et al., 2007). Such initiatives, however, will require political will and the reversal of discriminatory attitudes toward IPs/ICCs (Romero, 2020).

Technological Preparedness

Technological preparedness is a construct that represents our respondents' fluency with mobile devices and educational technology applications. For students, a mean score of 2.01 for questions that gauged their readiness to use devices specifically for online learning indicate a perceived lack of preparedness. However, the mean score for general comfort with mobile technology was 2.91. This discrepancy suggests that students felt prepared to use mobile devices generally, but felt comparatively unprepared to use them for online learning.

One major issue that kept respondents from engaging with distance learning is internet connectivity. In post-survey discussion groups, many students reported having to travel to the town center to access the internet, as broadband technology does not always extend to the mountainous regions in which ICCs are located. In 2015, the government launched the Juan Konek! Digital Empowerment Program, which aims to provide 99% free internet to Filipino people (Department of Information and Communications Technology, 2015). Low-income and

underserved communities have been largely unable to benefit from the increased accessibility. Infrastructure programs that seek to address issues of educational inequity for IPs/ICCs will therefore require targeted interventions that involve the consultation of Indigenous communities. It cannot be assumed that national programs, which often privilege the needs of lowland metropolitan populations, will be relevant to the needs of Indigenous Peoples, particularly in remote isolated areas.

Psychosocial Preparedness

Psychosocial factors are phenomena that occur on a societal level but affect the well-being of individuals (Upton, 2013). This study defines psychosocial preparedness as the degree to which participants feel empowered to contend with the realities of the pandemic. We calculated psychosocial preparedness according to how positively participants reported feeling about their ability to adapt to online modalities, independent learning, and the restrictions brought on by the pandemic.

Mean scores related to psychosocial preparedness show that respondents slightly disagreed with the notion that they are psychosocially prepared for distance learning. Though this study's respondents generally agree that distance learning is the most appropriate means for continuing formal education during the pandemic, they held somewhat pessimistic attitudes toward online learning. Comparing these scores with those that measure a positive outlook on adapting to COVID-19 indicate that IPs/ICCs feel more prepared to adapt to the pandemic itself than to online learning.

Socio-cultural Preparedness

Socio-cultural preparedness refers to the degree to which respondents feel their communities (including their schools, teachers, and government officials) are prepared to support their learning during the pandemic. The table below shows that students and parents generally agreed that their peers, family members, and elders were prepared to support their online learning activities.

The responses, however, suggest that students do not have the same amount of faith in school officials or governmental authorities. Respondents identified the widespread use of English as the language of instruction in online classes as an ongoing barrier. Despite being one of the Philippines' two official languages, English is a foreign language that bears little resonance with IPs' cultures and experiences (Leaño, 2019). Respondents reported that while local governments did provide supplies to schools in underserved areas, many IP communities were not included on the list of beneficiaries. The assistance IPs/ICCs did receive from their schools was limited to small grants and assistance with the processing of documents. These responses suggest that the needs of IPs were not actively prioritized during the Philippines' transition to online learning. As such, Indigenous aspirations, experiences, and perspectives should be prioritized when conceptualizing further initiatives to support Indigenous learners as they pursue the safe continuation of their studies.

The Challenges of Online and Distance Learning in Indigenous Communities

After the surveys were returned, the research team held Focus Group Discussions (FGD) with available participants to deepen and contextualize their responses. The FGDs were recorded and transcribed with the consent of the fifteen participants. These FGDs helped the researchers identify recurring themes and concerns while assessing the reliability of the questionnaire by identifying instances in which participants responded to the survey inaccurately. The transcriptions were analyzed and coded according to common themes such as uncertainty, fear, loss, initiative, and support. The FGDs were particularly helpful in contextualizing survey responses related to the challenges IPs encountered in online learning. These responses are represented in the table below according to the same Likert scaling methodology described above:

Table 3: ***Responses for Challenges Encountered***

Item	Mean Response (Students)	Mean Response (Parents)
Category A. Psychosocial Preparedness		
1. Environment not conducive to learning	2.84	2.77
2. Problems with time management	2.71	2.77
3. Low levels of motivation	2.19	2.05
4. Difficulty using device and online platforms	2.65	2.82
5. COVID-related stress	3.33	2.87
Weighted Mean	**2.74**	**2.66**
Category B. Financial Preparedness		
1. Limited financial resources	2.94	3.13
2. Lack of financial support from family members	2.58	2.69
Weighted Mean	**2.76**	**2.91**
Category C. Technological Preparedness		
1. Lack of devices suitable for online learning	2.77	3.03
2. Limited capacity to purchase load	2.90	2.97
3. Technical problems	2.94	2.97
4. Lack of proficiency in the use of technology	2.01	2.26
Weighted Mean	**2.66**	**2.81**
Category D. Socio-cultural Preparedness		
1. Language barriers	2.13	2.26
2. Studies against own will	1.86	2.05
3. Current setup is different from traditional learning	2.29	2.41
Weighted Mean	**2.09**	**2.24**

The table above shows that, overall, financial challenges were viewed as the biggest impediment to continuing education during the pandemic. This was followed by concerns about the suitability of available facilities, technical issues, and general pandemic-related stress. These concerns were also vocalized during the FGDs, out of which the researchers observed four primary themes: 1) a preference for in-person instruction, 2) the perception that online learning requires advanced and inaccessible technology, 3) the financial strain of the pandemic, and 4) the feeling that online learning is not conducive to student performance.

Table 4: ***Themes, Statements, and Insights from Focus Group Discussions***

Theme	Statement	Insight
Preference for the traditional learning modality	Activities which are designed to be performed in laboratory are difficult to understand without experiencing them, even when instructors provided a supplemental video outlining the procedure step-by-step. Students prefer to experience such activities rather than watching them.	Parents and students tend to favor traditional learning over online or distance learning modalities. Experiences provided by in-person teaching are more effective at constructing knowledge than online learning. Community and land-based learning further serve as an effective foundation and stimulus for learning (Andresen, Boud & Cohen, 2000).
Online learning system requires gadgets with more than the usual specifications.	Assessment exercises and sketch works cannot be performed using tablets with only 1 Gigabyte of memory. Zoom, the preferred video conferencing software, requires a processor of dual core 2-GHz or higher and RAM of 4 Gigabyte (Zoom Guide, n.d.).	The students feel that the learning system is designed for devices with high performance specifications, which are prohibitively expensive and inaccessible.
Financial and access issues create challenges in the new learning modality	Because of the poor signal, students are often disconnected, or lag times make it so that they cannot understand what was stated by the instructor. Joining a Zoom video conference also requires a minimum of fifty pesos ($1 USD) worth of load.	Attending online classes requires gadgets, load, stable bandwidth and is quite burdensome.
Online learning modalities negatively affect student performance	Students do the assigned tasks a day before or hours before the deadline of submission. Parents observe that student activities are difficult to monitor and, from their perspective, seem to lack academic focus.	Technological devices and social media are perceived to be distracting for students, thus compromising their ability to keep up with lectures and assignments, and academic tasks.

The FGDs and survey responses together enabled us to produce the following Tables of Correlation. These tables show the relationship between various demographic factors and respondents' perceptions of their psychosocial, financial, technological, and socio-cultural preparedness:

Table 5: ***Correlations between Respondent Profile and Perceived Level of Preparedness***

**No association (0); Negligible association (0.25); Weak association (0.26 to 0.50); Moderate association (0.51 to 0.75); Very Strong association (0.76 to 1); Perfect association (1)*

Profile	**Perceived Level of Preparedness (Students)**			
	Psychosocial	**Financial**	**Technological**	**Socio-cultural**
Gender	0.171	0.137	0.117	-0.104
Age	0.050	0.010	0.016	-0.011
Year Level	0.001	0.079	0.024	-0.014
Device Owned	-0.070	-0.087	-0.041	0.286
Location of ICC	-0.028	0.100	0.156	-0.007
Frequency of device usage	0.027	0.046	-0.057	0.044
Familiarity with Distance Learning	0.004	0.034	0.099	0.215
Number of family members on Distance Learning	0.295	-0.038	0.480	0.172
Reason for gadget use	-0.110	0.068	0.260	-0.011

Profile	**Perceived Level of Preparedness (Parents)**			
	Psychosocial	**Financial**	**Technological**	**Socio-cultural**
Gender	-0.131	-0.131	-0.053	-0.116
Age	-0.192	-0.192	0.173	0.122
Year Level	0.096	0.096	0.131	-0.075
Gadget Owned	0.083	0.083	0.036	0.029
Location of ICC	0.115	0.115	0.269	-0.130
Frequency of gadget usage	-0.058	-0.058	0.095	0.047
Number of family members on Distance Learning	0.046	0.046	0.420	0.011
Reason for gadget use	-0.133	-0.133	0.194	0.252

Most of the values indicate negligible association between demographic factors and students' perceived levels of preparedness. We observed a weak (or low positive) association between the number of family members enrolled in distance learning programs and student perceptions of their psychosocial and technological preparedness. We also observed a weak association between students' socio-cultural preparedness and whether they own an internet-

connected device. These findings suggest that those who do not already own a device felt that their communities both in and out of school were ill-equipped to support their learning.

Data collected from parent respondents suggests a weak association between technological preparedness and two key demographic considerations: the location of the ICCs and the number of family members enrolled in distance learning. These associations reflect the understandable concern that ICCs in more remote areas and with multiple children that require devices are susceptible to being underprepared for the technological demands of distance learning. These associations are noteworthy because they show that IPs are not concerned about their ability to comprehend the pedagogies used in online learning. Per IPs themselves, schools and government would be able to address many of their educational needs simply by providing devices or making them more accessible.

In the absence of institutional support, our respondents found their own ways of coping with the demands of online learning. Our respondents exhibited a high degree of adaptive capacity. Very much like the student (from Jamaica whose statement opens this article), students are prepared to traverse the mountains to find a reliable broadband signal and parents are often willing to pay for load, even if it means pursuing additional employment during a global pandemic. Their ability to apply this adaptive capacity to online learning, however, is limited by structural and financial barriers compounded by inequitable access to digital resources and services. Restricting IPs' access to technological tools can thus be interpreted as a threat to Indigenous self-determination and sovereignty, as these limitations preclude IPs from making informed decisions about their communal interests. Stakeholders can begin to address this inequity by providing devices, improving connectivity, and pursuing the multi-sectoral conversations among students, parents, community members, government officials, and educators that IPs/ICCs have been requesting for years (Philippine News Agency, 2020).

Section 4: Discussion, Recommendations, and Conclusion

The use of technology is not new to Indigenous Peoples, who have continuously developed sustainable technologies to support their survival and growth (Acabado et al., 2019). IP students and parents, however, share the perception that they are not financially or technologically prepared to pursue online education during the pandemic. The lack of support from institutional and governmental entities further prohibits IPs/ICCs from meeting the high material and infrastructural requirements of digital learning.

It is therefore imperative that financial support and IT equipment be provided to Indigenous students and communities. Local government units can utilize the Special Education Fund, a life-line for educators and students during times of crisis that comprises only five percent of a local government's income from property taxes. These funds can provide mobile computer laboratories for IP students, which represent a cost-effective and impactful strategy for providing technology to remote areas. Strengthening the coverage of the Juan Konek! Digital Empowerment Program would also assure stable connectivity in Indigenous communities. National efforts can take their lead from Nueva Ecija University of Technology, which in October 2020 drew internal funding and a gift from the University's President to provide Indigenous students with free tablets (GOVPH, 2020). In schools, non-Indigenous teachers who teach in English can adopt culturally appropriate pedagogies. This includes tailoring instruction to reflect Indigenous priorities, such as land, culture, kinship, and collective human rights. The use of English as the medium of

instruction, moreover, should never be accompanied by the discouragement or prohibition of Indigenous languages. These initiatives would help ensure that IPs/ICCs have equal opportunities to thrive in distance learning modalities and continue their studies during the pandemic.

This study's conceptualization of adaptive capacity resonates with the native Philippine virtue of *kalayaan* – a relational understanding of autonomy which argues that the most ethical actions are those one takes to protect one's community, not oneself (Enriquez, 1989). Translating adaptive capacity to kalayaan contextualizes our finding that IPs/ICCs are prepared to cultivate skills in digital learning because they believe that formal education is integral to their collective aspirations and survival. Excluding IPs from decisions about students' learning responses during the pandemic can therefore undermine kalayaan and, by extension, the right to Indigenous self-determination (Romero, 2021). All agencies and organizations involved in planning equitable educational programs during the pandemic must therefore consider how reforms can be attenuated toward the concerns of IPs/ICCs. This involves inviting IP students and parents to participate in strategic planning efforts to deliver culturally relevant online learning strategies and compensating them for their efforts. Such initiatives are essential for safeguarding the inalienable rights of the Indigenous Peoples of the Philippines, as defined by both domestic and international law.

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