



Connection Unstable: Digital justice in the context of the Youth and Student Sector

A Thematic Case Study presented
by Agham Youth National
together with the Computer Professionals' Union
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Context

The Philippine youth is a sector of society highly fluent in technology and the Internet. According to the Pew Research Center, 94% of people aged 18 to 29 have reported either using the Internet at least on occasion or owning a smartphone. Meanwhile, Talkwalker reports that almost 98% of social media users in the Philippines are younger than 35 years old. The youth's high engagement in the Internet and social media, coupled with the relatively young population of the country, has earned it many monikers in media, including the "social media capital of the world".

This high digital literacy presents an opportunity for civic society to use technology to reach out to the youth and promote active citizenry. As of now, the youth sector has a high distrust in government; according to Deloitte Philippines, only 16% of the youth sector regard public servants as an accurate source of information, hardly a surprise given deeply-rooted political impunity of the government elite and historical anti-people policies. By implementing truly pro-people reforms and giving the youth opportunities to become productive citizens and nation-builders, the public sector can stand to use technology well in pursuit of a better economy and a better, more equitable and just society for all.

Despite this, the rapid corporatization and monopolization of technology in the Philippines and around the globe pose a danger towards the development and engagement of the youth. With more essential services than ever being reliant on technology and the Internet - from the entire Philippine education system to even socializing amongst friends - it is important to tackle and understand issues in digital justice that the youth is facing, and carve a concrete way forward for the public sector in tackling these issues towards a better and more productive society for all.

In this case study, attention will be paid to the impacts of rapid digitalization among the youth, especially in the context of digital justice. The outlook of the sector will be sketched out with regards to digital equity, access to education, and data privacy. In particular, the impact of unchecked digitalization on the education sector, particularly in the context of distance

learning and the COVID-19 pandemic, will be laid out through surveys and focus discussions with students. These issues will then be linked back to the issue of monopolization in the digital space and the impacts that the profit motive has on the Internet and society at present. Throughout the case study, policy suggestions will be laid out to determine how best to move forward with the current state of play.

Equity and access

Arguably the most immediate issue plaguing digitalization in the country is rampant inequality with regards to technological access. While a large portion of the youth can access technology, stability and quality of access is another issue entirely. Chief among these issues of access is electricity stability and internet quality. According to the World Bank, 7.5% of the rural population does not have access to electricity as of 2019. Even if electricity access is present, it can be unstable, with many people forced to weather regular rotational power outages or only have access to electricity at certain times of the day. Although electrification has been a priority of the government for the past few years, unreliable electricity grids powered by aging infrastructure in the main islands and unreliable diesel infrastructure in far-flung areas means that constant electrification is still far from a reality.

If electricity access is not an issue for some, internet access is. According to the Department of Information and Communications Technology's National ICT Household Use Survey, only 17.7% of Filipino households have access to a home internet connection, with many Filipinos having to rely on public Internet connections (via Internet cafes, for example, where internet access is paid by the hour or even minute) or mobile data. Even then, 64% of barangays in the Philippines do not have access to a nearby cell tower. Even when Internet access is present, it is unreliable. Having unstable internet connection is still a reality for many Filipinos, even within urban areas. Thus, despite a marked increase in average Internet speeds over the past few years, the effects of these speed increases are still not felt by many.

Country	Broadband cost (per megabit per month), USD Dec 2020, Cable.co.uk	Mobile data cost of 1GB, USD April 2021, Cable.co.uk
Philippines	\$0.75	\$1.77
Singapore	\$0.04	\$1.09
Thailand	\$0.12	\$1.06
Vietnam	\$0.17	\$0.49
Malaysia	\$0.24	\$0.89

Table 1: Cost of Internet across Southeast Asian countries

There is also the issue of Internet access cost. For example, monthly broadband cost in the Philippines runs at about 53 US dollars or 75 cents per megabit according to comparison website Cable.co.uk, more expensive than our neighbors in Southeast Asia such as Singapore, Thailand, Hong Kong, and Vietnam. Mobile data cost in the Philippines, meanwhile, is cheaper than other countries in the world, but still more expensive than our neighbors. With at least 17.6 million Filipinos living below the poverty line, with many more barely making ends meet, Internet costs in the Philippines remain exorbitantly high for many.

The blatant inaccessibility and inequity in electricity and Internet access has dire consequences for the vast majority of Filipinos who are under threat of getting left behind by a rapidly-digitizing society. A worldwide pandemic has only accelerated the transition of government services and essential public information to the Internet; without the proper infrastructure in place to make digital services accessible to those outside city centers, many are in danger of being left behind, without access to the info and services they need for assistance or welfare.

This disparity is felt clearly in the education sector, where a rapid and unplanned shift to distance learning has left millions of young Filipinos behind. The education sector has already been grappling with many issues regarding equitability, quality, and access to resources, despite numerous reforms over the years. A lack of attention to instructor quality and support and the development of schools across the country has led to dismal educational opportunities for many students; for example, National Achievement Test scores remain dismally below the passing rate of 70% in the areas of math and science. The 2018 Programme for International Student Assessment (PISA) ranks Filipino students low in reading comprehension, math, and science, with more affluent students scoring higher than their disadvantaged peers.

Despite a two-year addition to the number of years of basic education in the country - along with various promised student-centric reforms - in the early 2010s, the World Bank still puts the “learner-adjusted years of education” - the number of equivalent years of education an average learner gets, normalized across countries to account for actual educational quality - are still at 7.5 years, drastically lower than our Southeast Asian peers. Coupled with the high costs of education across all year levels, and many Filipino families are either forced to either make ends meet for their children to continue education, or are even forced to drop out entirely. Philippine Statistics Authority estimates that 3.6 million Filipinos are “out-of-school youth”, forced to drop out of school for economic, personal, or other reasons.

Even before the pandemic, and despite steps by the Department of Education to encourage digitalization and “e-learning”, many schools were still unprepared to integrate or shift to online modes of learning. According to a 2019 study by the Asia Foundation, 74% of schools did not have access to the Internet. A DepEd study cited 2.8 million students as having no way of going online; of the 6.8 million students that could go online, about 20% used public places such as computer shops to use the Internet.

As the government shifted its educational policy to blended learning in mid-2020 as a result of the pandemic - a combination of online and physical, self-guided modes of learning -

this inequity was laid bare even more. A Social Weather Stations survey stated that 80% or 23.8 million Filipino students opted to learn using “modular learning”, a system wherein schools would deliver standardized and self-completed learning modules to students in lieu of more direct and guided instruction through the Internet or other means. 42% of students were found to not use any digital devices at all for distance learning. In a high school in Montalban, Rizal, 30 minutes out from the National Capital Region, only 19% of the 6,700 students opted for online classes. Worse still, many students opted to drop out entirely, unable to weather the effects of the pandemic; the United Nations Children’s Fund notes that school enrollments have dropped by a million since classes resumed under the blended learning setup in late 2020.

With the rapid transition to online classes, students and families already suffering the brunt of one of the worst economic downturns in Philippine economic history since the Second World War were forced to tighten their wallets even further to provide for the Internet and gadget needs of students. A DepEd enrollment survey conducted at the start of the 2020-2021 school year stated that almost 7 million parents of students feared that lack of proper gadgets such as laptops, tablets, or smartphones would impact their students’ capacity to learn. Another 6 million parents cited insufficient Internet allowance as a hindrance to education. Without a nationally-instituted plan to provide gadgets and Internet allowance for disadvantaged students, many students have to get creative to make ends meet. Students are forced to get loans from relatives, get a second job selling products and services online, or rely on “get-rich-quick” lottery-type schemes from e-commerce websites. For example, a common trend found in social media was the “#PisoParaSaLaptop” initiative, where students would post on social media asking for donations of at least a peso (0.50 USD) to fund their technological needs for the coming semester. Worse still, out of desperation, students may fall into prostitution and the selling of risque photos online just to have enough money to buy a new laptop or pay off their tuition fees. As Dr. Sharmila Parmanand of the University of Cambridge puts it, “Students engage in sex work to pay for their tuition because we live in a world where we don’t subsidize education enough.”

This digital divide is felt even more deeply in far-flung regions of the country, where Internet and electricity access, much less proper access to villages and roads, are hard to come by. In a report by the Heinrich Böll Foundation, a remote village in Siargao, where electricity is only available for three hours a day and the nearest urban center is only reachable by motorized boat, many students are having difficulties in the remote learning setup. With many residents in the village being fisherfolk and without any formal schooling, parents are hard-pressed to guide their children through a modular learning setup. The same can be said for many areas in the Philippines, even in urban zones. In San Roque, a community found in the middle of Quezon City, many parents, usually coming from the province and are farmers or fisherfolk themselves, struggle to guide their children through remote learning modules. Although the community is fortunate to get the guidance and support of community and non-governmental organizations to assist students with their schooling, many communities in the Philippines may not be as fortunate.

Although a safe return to face-to-face classes is still the best option for many students, as the pandemic still continues to ravage the archipelago, online and directly-guided learning is the best option for many students to be able to continue with schooling. This way, students would at least have the experience of learning alongside their peers, and teachers can easily identify students struggling with the current setup and offer direct intervention, guidance, and support to them or their parents. But with the current state of digital infrastructure available to many students, this is simply not possible. When students might not even have stable access to electricity, much less the Internet, teachers, students, and educators are forced to make amends with other forms of instruction that are much less guided and are much more difficult for everyone involved. Even in instances where online learning is an option, the lack of support for teachers and students results in a suboptimal schooling experience.

Case study: Remote learning for tertiary STEM students

In early 2020, Agham Youth conducted a survey among students to comprehend the effects of remote learning during the early months of the pandemic. During the conduct of the survey, the full extent of DepEd's plans to proceed with remote learning remained unclear;

however, many universities in the Philippines, particularly those who had already invested in digital infrastructure years or even decades prior, had already attempted to transition to a remote learning setup. To gauge the readiness of the tertiary education system to the remote learning setup, Agham Youth surveyed 3,602 graduate and undergraduate students, hailing from almost all regions and provinces in the Philippines. The survey covered the period of March to July 2020.

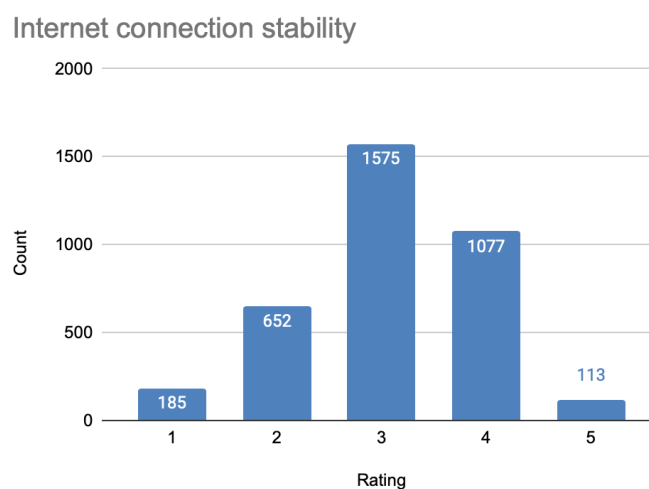


Figure 1. Internet connection stability of respondents, 2020 Agham Youth survey.

The results of the survey did not bode well for the prospects of online learning in the Philippines. A majority of students who answered reported having poor to average Internet connection, which is highly concerning especially considering that, since the study was disseminated online, respondents with highly unstable or no internet connection at all would not be represented in the survey. Even during the early months of the pandemic, it was clear that digital infrastructure in the Philippines was not ready for a rapid national shift to online learning.

Internet stability of respondents with preferred learning situation

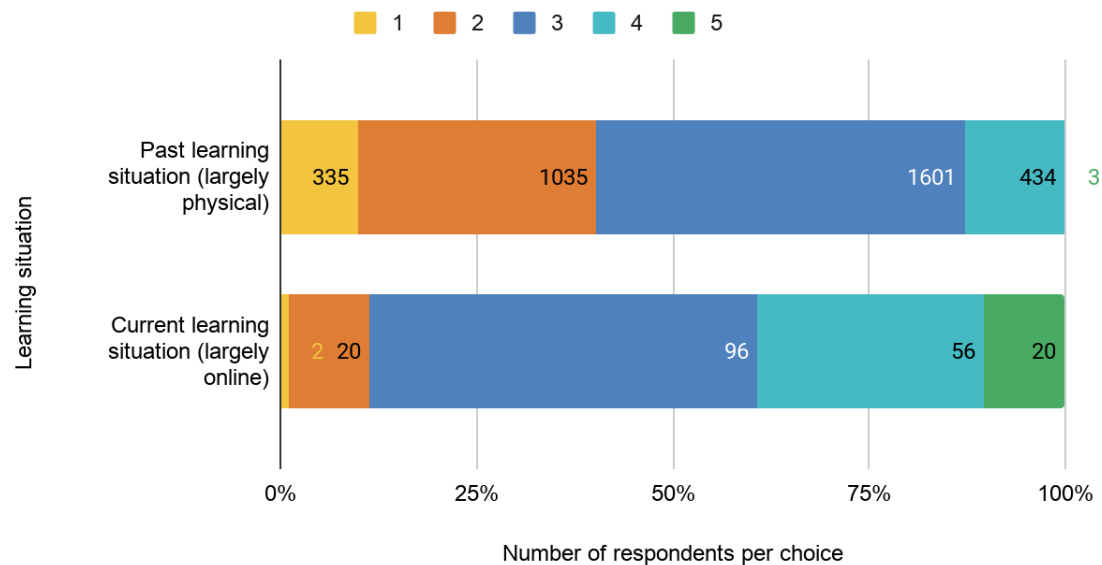


Figure 2. Internet stability per preferred learning situation, 2020 Agham Youth survey.

Internet connection stability made an impact on the capacity of students to proceed with online learning, according to the study. For example, students who preferred the remote learning setup tended to have more stable internet than students who preferred physical or face-to-face classes. This showed the clear divide in society created as a result of inadequate digital infrastructure. For many students, difficulties in accessing a stable Internet connection or getting adequate devices hinder their ability to learn effectively. This was further exacerbated by a difficult political and public health situation and a lack of concrete governmental action on student and school support.

Comparison of how the semester should proceed with internet connection stability

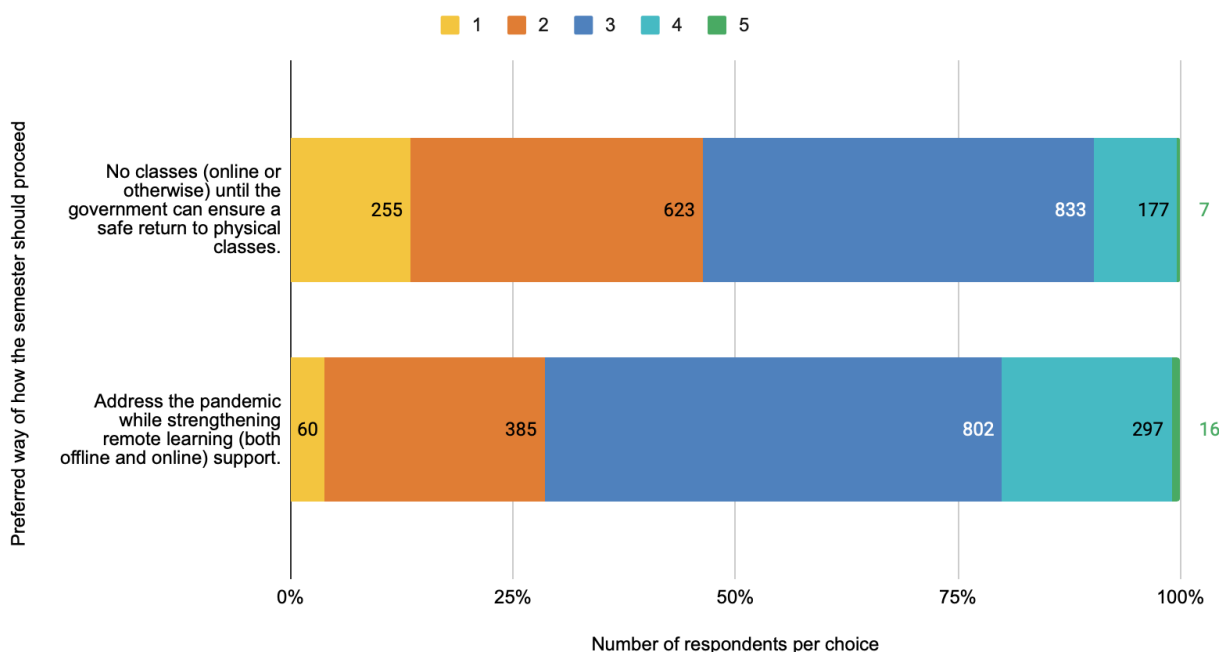


Figure 3. Response in “internet connection stability” versus how the government should approach education amid the pandemic, 2020 Agham Youth survey.

As a result, many students, faced with uncertainties and a lack of support, opted for an “academic freeze”, or a termination of any form of schooling until a safe return to physical classes could be resumed. During this time, the debate between the resumption or the total cancellation of remote learning was a hot-button issue of the day, due precisely to the inequities present in the education system that made remote learning difficult. While a full termination of classes was infeasible due to the societal and economic challenges it would impose on many, student concerns regarding their capacity to catch up, or let alone attend, remote learning remained a valid concern.

About a year later, in July 2020, Agham Youth conducted another study to gauge the sentiments of students, in particular those in the fields of science, technology, mathematics, and engineering (STEM), with regards to the online learning situation in the past year. STEM students, especially at the tertiary level, faced many difficulties with transitioning to the remote learning setup. For example, many laboratory or field-heavy courses such as biology and chemistry have had to find ways to adapt their curricula online. With many students having little

to no access to scientific laboratories and many universities still closed, departments and classes have had to rely on video or software-based laboratory demonstrations, home experiments, or even pre-filled out laboratory worksheets, where experiment data has already been provided. For many, the transition to remote classes was difficult, resulting in stress for many students, professors, and even university administrators in ensuring that key skills are still learned and met. In fact, some departments opted to hold off completely on providing laboratory courses, choosing instead to delay offering these courses until face-to-face classes could be at least partially ensured.

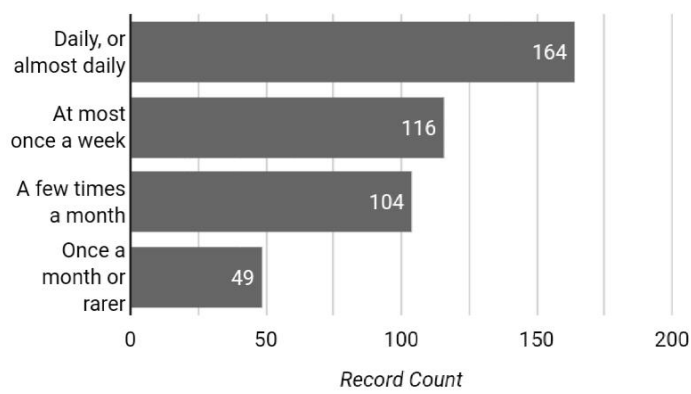


Figure 4. Frequency of internet stability issues experienced by students, 2021 Agham Youth survey.

The results of the survey were roughly the same, if not worse, than the study conducted a year earlier. A vast majority of respondents in the second survey experienced frequent Internet stability issues, with more than a third stating that they experienced issues with their Internet connection daily.

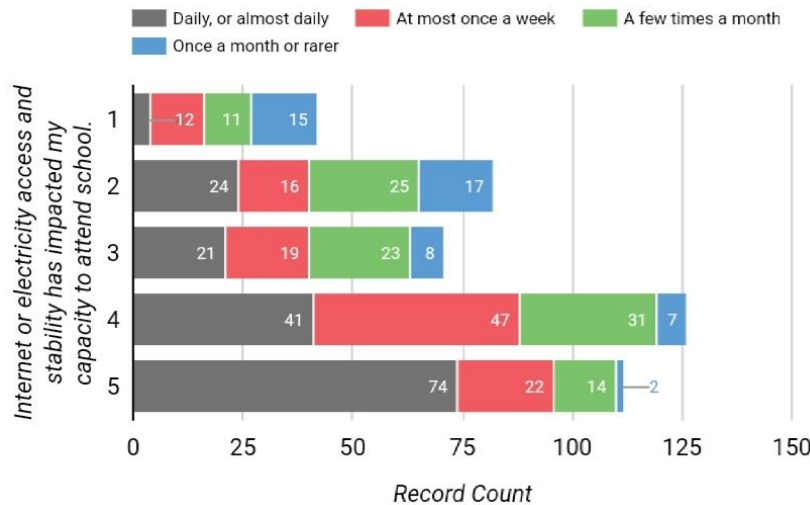


Figure 5. Effect of internet stability issues on students' capacity to attend school, 2021 Agham Youth survey.

As with before, students who are frequently affected by internet stability issues tend to have their remote learning experience more greatly impacted. Students who experience daily connectivity issues are more likely to state that internet access has impacted their capacity to attend school, while those who rarely have internet stability issues would more likely state the opposite.

Privacy

An often-overlooked issue in the digital space, especially among services used by the youth, is data privacy. As large corporations control more and more of the digital space we occupy and converse through, they also have unparalleled access to personal information used for targeted advertising or other, more nefarious purposes.

This problem is especially prevalent in nations like the Philippines, where a high cost of Internet connectivity means that many people will opt to use social media platforms that offer low-cost or even free access. For example, a report from Datareportal states that 96% of Filipino internet users at least once. This can not be solely attributed to the ubiquity of Facebook as a social media platform both locally and globally, but also to its low access costs;

on both of the country's major telecommunications platforms, SMART Communications and Globe Telecom, access to a version of Facebook without images is completely free of charge, and full access to Facebook can be had for as low as 10 pesos (about 0.20 USD) a day. As a result of this ease of use, many teachers opt to converse with their students, or even hold their classes, entirely over Facebook and its companion chat application Messenger. Teachers would disseminate homework and even give lectures through this platform, and students can choose to submit their work to their teachers through this same platform as well. It is not uncommon for even work-related discussions among faculty or school administrators to be facilitated via Facebook as well, although fortunately other platforms such as email are available for use as well.

Despite the ubiquity of Facebook as a pseudo-learning management system, and even an endorsement of it as a platform by the state-run press agency, there are many data privacy issues that hound the platform and make it unsuitable in the long term. Chief among these issues is the lack of data ownership among educational stakeholders. Since data produced on Facebook is owned by Facebook itself, schools do not have the authority to revoke or limit access to certain sensitive data. Schools are essentially beholden to the authority of Facebook; in case of unauthorized access to data due to an account breach, for example, a school has essentially zero options on how to limit the damage it may cause.

There is also the issue of Facebook not chiefly being an educational platform, but a social media platform whose primary income stream is through targeted advertising. This overlap presents multiple issues. First off, students and teachers would most likely use their personal accounts for work and school-related matters as well, which poses a possible danger when other possibly-nefarious personalities search through personal Facebook profile pages for potentially-incriminating information. For example, a bad actor with a personal vendetta against a teacher or a student can search through their Facebook profile for data that could potentially be used against them, or a local government official might search through teachers within a school district and inspect their political leanings.

Of course, Facebook's status as an advertising behemoth - it is projected to earn almost 100 billion US dollars in 2021 - also puts its status as a tool for educators into jeopardy. Facebook's priority is not to make their platform into a conducive educator tool, but to make profit off of its users through collecting their private data. Thus, all information that it collects from its users - even from students or teachers - are treated equally for purposes of targeting advertising. This is especially worrying for young students, for example, who might be less technologically adept and can more easily fall prey to advertising and even scams.

Facebook also has a myriad of privacy issues under its belt, many of which it is struggling to deal with under the ever more intense scrutiny of governments, even here in the Philippines. For example, in the now-infamous Cambridge Analytica scandal, applications operating on the Facebook platform were found to have collected personal data on millions of its users without consent for political purposes. The social media company was found to be guilty by many governmental agencies of not adequately placing measures to protect the data of its users. More recently, a data breach affecting almost a million Filipinos and 500 million more users in other countries was found to have happened in early 2021. Although hackers would not have gotten access to passwords through this breach, the personally-identifiable information accessible in the breach would be enough to launch social engineering attacks against affected users, affecting their personal privacy and security.

Facebook's status as almost essential in contemporary Philippine society - especially for many members of the youth, who rely on the platform to socialize and conduct classes - puts its privacy practices into further scrutiny. However, other large corporations that dictate much of the e-learning space in the Philippines have their own issues as well. For example, Google, who provides technical infrastructure for many schools and universities and offers a learning management system (LMS) of its own, has suffered its own privacy issues over the years. In school districts in the state of Arizona, for example, Google allegedly spied on students by tracking their activity outside of the classroom, through Google-powered devices provided to students. The educational technology company Instructure, developers of popular LMS Canvas, cited in an investor conference in 2019 that they possess the "most

comprehensive database on the educational experience in the globe”, and thus had the power to develop predictive models and algorithms on the data they possess.

Video conference platforms, a mainstay of the education system during the COVID-19 pandemic, have its own share of privacy issues. The company behind Zoom, for example, has been repeatedly put under fire for dubious privacy claims, including sharing data with third-parties, false claims over the strength of its encryption, and failing to protect its users from nefarious disruptions in private meetings or “Zoombombing”. The other players in the video conferencing space - Google’s Meet and Microsoft’s Teams applications, in particular - have also been found to track user information, and themselves are owned by large corporations that have had their own share of privacy issues.

All of these concerns over data have risen in recent years, in spite of the fact that the Philippines’ capacity to deal with data privacy issues is still relatively young. The Philippines’ National Privacy Commission was formed only in 2016, when Facebook and other large corporations already had a stronghold on the Philippine market. While the NPC has been vocal in defending the rights of users online, especially against platforms like Facebook, there is still much progress to be done especially in holding more private institutions accountable for data privacy rights. For example, while the NPC was critical of Facebook during the aforementioned data breach in early 2021 as it affected a significant portion of the Philippine Internet population, the NPC has yet to launch a wider investigation of Facebook’s impact on data privacy rights in the Philippines.

In addition, while the NPC is active in formulating policies to assist government agencies and other stakeholders in ensuring that data privacy is upheld, a lack of awareness among the general population has led to these efforts mostly unnoticed by the public. For example, the NPC has a comprehensive guide on how to ensure data privacy during the current remote learning setup, but it has not been publicized or made widespread. Thus, government advisories that state, for example, that social media use in education should be discouraged are often left unheard of by teachers and students, much less the government’s own agencies.

Monopolization

The weak safeguards in place to protect user privacy and promote technological equity has largely been allowed, if not even enforced, by the technological duopolies that control much of the technology sector, even in education. Across multiple industries - in telecommunication, on the Internet, on IT infrastructure and devices - large multinational corporations and their local counterparts, backed by local billionaires, exert their unchecked power over consumers, leaving them vulnerable to data inequity and privacy breaches.

A clear example of monopolization in the Philippine tech space involves the telecommunications industry, with the only two major players as of late being Globe Telecom, largely owned by the historic Ayala family of business tycoons, and PLDT/Smart, owned by Manuel V. Pangilinan. Both Pangilinan and the Ayala family also have stakes in various other corporations. In particular, the Ayalas also own a private university and a network of private high schools (under partnership with the American higher education company Pearson), while Pangilinan has various stakes in universities, particularly in his alma mater, the Ateneo de Manila University.

The historic duopoly in the telecom industry has been attributed by many to be a primary factor in the stagnation of internet quality in the Philippines. Without an incentive to compete, both companies choose to compete on the perceived “bang-for-buck” of the promos they give to consumers, instead of actual quality of service. Because of this, telecommunication companies, for example, promote rapid expansion of their home internet services by encouraging people to sign up, without actually improving service quality or technical support. Thus, customers of internet service providers frequently report slow speeds during most hours of the day, frequent outages, or even getting disconnected from their Internet service without warning entirely.

Monopolization is not isolated to the telecom industry; in social media platforms, providers of critical Internet services like email and social media, and even in the education

industry, only a handful of companies control a vast majority of the market share. A pursuit of profits over service quality mean that these companies will most likely offer subpar services just to increase their margins, and since consumers most likely will not have any readily-accessible alternatives, they become beholden to the services of the company that is exploiting them. In the case of free services such as Facebook, the user becomes the product; personal information of users are sold to advertisers who then buy ad space from the company itself. As a result, user privacy is compromised in order to increase the profits of both the company selling the product and the advertising platform. In fact, many companies offering free services are most likely advertising companies as well; the sheer volume and breadth of available collectable data is so profitable that companies will most likely make more profit offering a free product and selling user information rather than offering a paid product.

Monopolization in education: the case of the eUP project

The impacts of monopolization and its effects on home-grown technological solutions can be starkly seen in the University of the Philippines' efforts to streamline its digital processes. The university and its constituent universities have harbored home-grown solutions to their information technology needs since the 1990s. For example, UP Diliman's Computerized Registration System, a system built in-house by the university to serve the needs of its constituents regarding student registration, class enlisting, grade encoding, and other needs. Similar initiatives were present in other constituent universities as well: the UP Visayas had their own version of the CRS, while UP Los Banos has had its SystemOne application since 2004.

In the early 2010s, the administration of the UP system, led by Alfredo V. Pascual, embarked on a project to integrate the information technology infrastructure of the numerous constituent universities, through what was dubbed the "eUP program". Through a partnership with American IT solutions company Oracle, the system would transition to a platform powered by Oracle's own management solutions, specifically PeopleSoft Campus Solutions, its human resource management system tailored to the needs of universities. For the project, the

university chose to partner with PLDT, a local telecommunications company and one of the two major players in the industry, for its system integration needs.

PeopleSoft's solutions have been known to be unreliable at best and insecure at worst, due to it being built on a decades-old codebase with difficult-to-get technical support. Rollouts of the service in other universities have been marked with issues, with servers frequently crashing, data easily being lost, and system outputs being entirely inaccurate. Some universities who have partnered with Oracle in the past have even gone and sued the company for failing to provide essential services in a timely manner.

The administration decided to roll out the eUP project slowly, focusing on a handful of universities first: UP Manila in 2013 and UP Los Banos in 2016. This initial rollout of the PeopleSoft software - particularly the Student Academic Information System, which handles student records and registration - proved disastrous. During its rollout in UPLB in 2016, students reported slow loading times, an uncomfortable and confusing user interface, and even frequent crashes. A subsequent survey by the UPLB student council revealed that, during the initial registration period, 37% of those surveyed received no classes at all. Similar stories occurred, and continue to occur, in both UP Manila and UPLB, leading student councils across the system to resolve to resist SAIS and other similar forms of foreign-born, unreliable technology in favor of home-grown solutions in 2019. Due to active resistance, to this day the SAIS has not been rolled out outside of the campuses where it was initially tested; in fact, the UP Diliman CRS remains actively updated to this day.

Aside from issues of stability, the eUP project was also fraught with allegations of dubious transactions. External observers and critics of the project point to a government bidding process that, instead of being transparent and open to all, seemed to "favor PLDT and Oracle" in an unfair manner. The project costs also alarmed many students; the UP Diliman student council, for example, observed that the three-year costs to build and maintain IT infrastructure for SAIS alone exceeded the historical costs of all of UP's existing legacy systems. Annual support costs with Oracle were estimated to be almost double the annual salary paid to the existing team that maintained the existing UP Diliman CRS.

The promise of eUP was to integrate the existing yet disjointed information facilities of the university, supposedly to facilitate an easier experience for its constituents. While its intentions were genuine, its implementation was far from stellar, brought about by a false prioritization of its proponents and a lack of support for home-grown solutions. Existing solutions already developed by the universities such as the CRS, while far from perfect, offered an easily-extendable system that the system could expand and call its own; its needs could be more easily catered to the needs of constituents and more readily extended based on user feedback. In contrast, “cookie-cutter” proprietary solutions provided by large IT companies, often built on aging infrastructure and relentlessly cost down by its owners, are difficult to extend and rely on costly contracts to maintain and update.

Policy suggestions

There needs to be an immediate response from the public sector in order to curb the influence of multinational corporations, increase digital equity, and promote digital privacy. The COVID-19 pandemic presents an especially opportune moment in this regard; as more families become wired to the Internet and get used to the digital world, governments need to step up even more and reduce the influence of corporations, helping the next million people go online safely and access the services they need.

In the context of the COVID-19 pandemic in particular, the government must enact immediate reforms to ensure that students do not get left behind. A form of immediate relief that could be given to students and teachers can come in the form of monthly internet allowances to allow students to access data-heavy resources such as video conferencing and video streaming sites. This will lift the burden out of families who might be struggling to provide adequate Internet connection for themselves or for their children. In addition, the government must also implement nationally-coordinated initiatives to provide for those who need laptops, tablets, or smartphones. For example, schools can be provided with laptops or tablets that can then be sent on loan to students who need them. The government must also seek to promote and encourage the development of existing local solutions, particularly in the educational

sector; in particular, attention must be placed towards edtech solutions and online, freely-accessible educational resources.

Beyond the COVID-19 pandemic, longer-lasting reforms are needed to ensure that the Filipino youth, and all Filipinos in general, have equal and secure access to technological services. The most urgent need as of now is government support for technological development across the archipelago, through a national connectivity program. Control of Internet infrastructure must be wrestled away from the major telcos and be made a public good, with the government developing initiatives to increase internet speed, stability, and affordability. Rural connectivity must be a central concern to enable those in far-flung locations to access public information; however, connectivity initiatives must be done separate from corporate or political interests, whether from those in the telecom sector, companies with vested interests in profiting of rural areas, or militaristic goals.

Aside from enforcing advancements in internet affordability, internet neutrality must be an enforced government policy by the National Telecommunications Commission. No efforts must be made by any telecommunications agency to unfairly prioritize the services of a certain company by providing their services at a free or lower cost. This levels the playing field between websites with large financial backing and home-grown websites that do not have the same access to resources. Net neutrality and internet affordability must go hand in hand; removing artificial barriers such as “free Facebook” can only be possible if Internet access in general is more affordable for the masses.

With net neutrality enforced, the government must thus promote the local development of IT services, especially for the education sector. DepEd’s existing Commons program must be expanded and further developed, and all educational activity must be transitioned to the department’s own learning management systems to facilitate data ownership on the part of schools. In addition, data privacy and literacy must be made an integral part of the basic education curriculum, to ensure that students are equipped to be proper digital citizens. Teachers, educators, and administrators must also be given data privacy training.

Of course, the local technology sector must also be developed and strengthened to reduce dependence on foreign multinational technology. To this end, technology education must be strengthened from primary education, through a robust nationalist, scientific, and mass-oriented ICT curriculum coupled with provisions for computer labs and other equipment. The government must incentivize and boost the local technological scene, encouraging them to develop and innovate on home-grown problems and developing local alternatives to existing technologies that cater more towards the needs of the populace. Through these initiatives and a government policy of national industrialization and developing the local economy, the local technology scene can develop into a pro-people sector that is able to readily adapt to the needs of the youth and the nation as a whole.

Conclusion

Although the Philippine youth sector is highly engaged in the digital sphere, issues in data equity and privacy hound them and prevent them from harnessing the full potential of technology and the Internet to promote a fairer and just society. Even now, Internet use is still expensive and unreliable, stable electricity is still not a reality for all Filipinos, and data privacy remains a hot-button issue. Because of these issues, the Philippine youth is faced with an uncertain future, with low educational quality offering them low opportunities for work and data privacy issues placing them in the line of danger from bad actors.

These issues have largely been fueled by the unbounded control of large corporations over the Internet marketplace, motivated by profit rather than the genuine development of societies. Thus, there needs to be a sweeping change in how the public sector deals with technology moving forward. Steps must be taken to reduce the dependence of the local Internet on services provided by multinational corporations and bring the control of the Internet back to the people, in order to ensure a freer and fairer Internet for all.

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