

Barriers of Distance Learning in Physical Education of Learners with Hearing Impairment

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ABSTRACT

This research determined the barriers of distance learning in physical education of learners with hearing impairment in Cebu, Philippines through a descriptive correlation design. There were 13 deaf and 2 hard of hearing students, tagged as the student group; and 15 parents of the said students, classified as parent group. They were selected through a purposive sampling technique, subject to inclusion and exclusion criteria. Informed consent, assent and other ethical matters provided by the university were strictly complied with. Researcher-made questionnaires, written in Cebuano and had an English translation, were utilized after it had undergone the pilot testing and passed the validity and consistency test with 0.76 Cronbach Alpha (CA) values. The study's findings revealed that both respondent groups perceived to have a slow internet connection. The barriers encountered in the implementation of distance learning were: technical knowledge in troubleshooting technological issues of the computer; do not have money to buy load for data/internet connection; too bulky chunks of information; the problem of intermittent connection; the lack of knowledge on how to use the online platforms; the lack of equipment for our online class; and adaptation difficulties of the new education delivery approach. There was no significant relationship between the extent of barriers in the implementation of distance learning and internet connectivity. Lastly, there was no significant difference between the perceptions of students and parents on the extent of barriers in the implementation of distance learning.

Keywords: Special Education, Physical Education, Distance Learning, Learners with Hearing Impairment, Descriptive Correlation, Cebu, Philippines

I. Introduction

The COVID 19 pandemic does not only threaten the lives of the people across the globe but also it gives a chain of challenges that thrusts the economic, tourism, trade and other sectors to undergo drastic changes in terms of management of work practices and avoid in-person interactions to curve the virus transmission and save lives. The delivery of educational services has shifted to distance learning where synchronous and asynchronous sessions become the trends for both regular and special education. YouTube, learning management system (LMS), digital library, Zoom, Google Hangouts, Facebook, WhatsApp, Google forms are the most common online platforms used (World Bank, 2020b).

In distance learning, the teachers and learners experience separation due to the physical space. The separation is potentially problematic as it may have contributed to students' feelings of isolation, reduced motivation, engagement, and eventually attrition (bin Nordin et. al., 2021). As the theory of transactional distance explains that the teaching and learning setting of distance learning produces significant separation between learners and teachers that causes the imbalance of teacher-and-student direct dialogue, structure (Moore, 1993), and learner autonomy which would more likely result to less learning absorption (Benson & Samarawickrema, 2009). The distance represents a communications gap that affects both teachers' and learners' behavior. Alsadoon & Turkestani (2020) confirmed that distance education has resulted in social distancing and a lack of physical gestures, making the learning environment difficult for the majority of the students, especially those with learning impairments and disabilities. Burgstahler et al., (2004) illuminated that distance education is based on learning "anytime, anywhere." However, it could erect barriers to the participation of some students with disabilities, particularly those with learning disabilities and hearing impairments because their conditions demand the presence of up-close facilitator that narrows down their focus to certain tasks and maintain their interest and articulation so they could grasp the knowledge and acquire the skills taught (Alqraini & Alasim 2021).

Hearing impairment (HI), a condition where an individual is impaired in processing linguistic information through hearing and has two categories: deaf and hard of hearing conditions (d/HHD). Deaf refers to a person who loses his/her hearing to mild to severe cases where she/he cannot hear anything, while hard of hearing relates to hearing loss but have a few sounds that he/she can listen to with the help of hearing devices (Maiorana-Basas & Pagliaro 2014). These hearing impairments have been recognised as a global pandemic as it is the most common congenital abnormality found in newborns (Tucci, et. al., 2009). The needs of students with hearing impairment being unique to each individual student, their support needs being complex due to communication barriers and the cost of support provisioning, such as for (human) note-takers and interpreters (Alqraini & Alasim 2021). Breth (2010) indicated that language interpreters would find it hard to communicate with students with hearing impairments. In health crises such as COVID-19, students with disabilities are receiving less help and inadequately trained teachers (Alea et. al., 2020). Furthermore, students with disabilities face difficulty participating actively due to equipment, internet access, and especially designed materials and support. These are the problems facing students with disabilities and without disability, and this learning is producing more cost (bin Nordin et. al., 2021). Maiorana-Basas & Pagliaro (2014) stressed that technology, information about the use and accessibility of the devices among the deaf and hard of hearing (DHH) is crucial as it allows the Deaf and Hard of Hearing persons to participate in the society, perform well in their education, and fully providing opportunities for personal and professional growth. Undoubtedly, the COVID-19 pandemic doubled the hurdles of children with disabilities because of lacking access to essential services from SpEd teachers and inaccessible assistive technologies such as audiobooks, print materials in Braille, and audio provision or graphics specialized for PWDs (Chung et. al., 2020). Furthermore, the pandemic also resulted in more struggles of PWDs' parents or caregivers because they acted as teachers without formal training in teaching students with disabilities (Alqraini & Alasim 2021). Neeraja (2013) revealed that learners

with disabilities have trouble in internalizing problems and processing pieces of information accurately when stressed in terms of assistive technology and stable internet connectivity. Farhan & Razmak (2020) corroborated that accessing the learning management system, course materials, and communication were the barriers found among the students with disabilities during distance learning. As Cole (2017) stated, the teachers who lack proper training in educating students with disabilities struggle to meet students' goals and everyday needs. While Paul (2009) argued that the transformation of classrooms into distance education affects the quality of teaching for math, science, and literacy skills for lack of competent interpreters that could aid the learners in explaining some matters in the module. Algraini & Alasim (2021) identified that distracted and lack of focus during lessons on the platform; the platform does not meet their children's needs due to the lack of sign language and subtitles in online videos; and the high cost of purchasing electronic devices, as well as communication difficulties between teachers and students were the challenges encountered by /Deaf and Hard of Hearing Students during the COVID-19 Pandemic in Saudi Arabia.

The Asia and Pacific Regional Bureau of Education mentioned that the world's population, approximately 15% are living with disabilities, and that is representing 1 billion people and due to the lack of information, the numbers of students with a disability that are receiving inadequate educational support in this pandemic are unclear. Out of 92.1 million household populations in the Philippines, 1.4 million had a disability who are placed heterogeneously among other disabilities (Dianito et. al., 2021). This entails gigantic tasks of the special education teachers to customize the instruction per disability thru an online or modular approach as the learning process has to continue. In Cebu City, a premiere state university offers a program for hard of hearing and deaf students to continue their studies in College under the Republic Act (RA No.7722), otherwise known as the "Higher Education Act of 1994 to ensure the quality of education is accessible to all learners with special needs. One of the subjects that the said students with hearing impairments have is Physical Education in which during the

delivery of the lessons and other activities are done through distance learning. In its truest sense, these students with hearing impairments are more likely to face barriers to education through remote-learning practices considering that physical education is more on performance tasks than written works (Carabajal et. al., 2017); the students with hearing impairment; their technological resources and support system in their respective households; and other forms of possible constraints that would impede the learning acquisitions are the reasons that give birth to this study in order to ascertain the barriers of distance learning in physical education of learners with hearing impairments (LHIs) for the continuous instruction improvement and elevating the well-being of the LHIs amidst the pandemic. Categorically, this study answers the following questions: 1. What is the status of the internet connectivity of the students with hearing impairment? 2. To what extent are the barriers in the implementation of distance learning as perceived by the respondent groups? 3. Is there a significant relationship between the extent of barriers in the implementation of distance learning and internet connectivity? 4. Is there a significant difference between the perceptions of students and parents on the extent of the barriers in the implementation of distance learning?

II. Methodology

This study employed a descriptive correlation design where the profile was known thru frequency ranking; the extent of barriers was described through a 5-point Likert scale, and the correlation between the profile and extent of barriers and the difference of the respondent groups' perceptions on the extent of the barriers in the implementation of distance learning was established through Chi-square test and Mann-Whitney U-test was employed to distinctively treat the data for their eventual analysis. The use of this design appropriates such intent to infer the research variables since it describes either their association or difference which occurs naturally between them (Bakar, 2018). There were 13 deaf and 2 hard of hearing students, all were bonafide students at a premier state university in Cebu City, Philippines, tagged as the student group; and 15 parents of the said students with hearing

impairments, classified as the parent group. They were selected through a purposive sampling technique, subject inclusion, and exclusion criteria. Informed consent, assent, and other ethical matters provided by the university were strictly complied with. Researcher-made questionnaires, written in Cebuano and had an English translation, were utilized after it had undergone the pilot testing and passed the validity and consistency test with 0.76 Cronbach Alpha (CA) values. Data gathering was conducted in two phases: the questionnaires were sent via Gmail to the respondents, and they were given 2 weeks to answer such. After all the questionnaires were returned, the researchers conducted the online interview, for a week thru Zoom, to clarify some matters that the respondents and researchers want to be clarified to ensure that the responses were of good credibility and reliability.

III. Results and Discussions

In reference to the objectives of the recent study, four statistical tables are presented here. The initial table pointed out the issue of internet connectivity which may affect the scholastic engagement of the learners who are deaf and hard of hearing. Also, the second table shows the extent of barriers that the concerned stakeholders are particularly concerned of during the implementation of distance learning. Nonetheless, the last two sets of table presented the scientific results of the tests of significance for both the relationship and difference of these identified research variables.

Table 1. Status of internet connectivity

Status of Internet Connectivity	Frequency	Percentage
Fast Internet Connection	8	26.67%
Slow Internet Connection	18	60.00%
Unstable Internet Connection	4	13.33%
Total	30	100.00%

The table shows that both groups of respondents, deaf and hard of hearing, and their parents, conveyed slow internet connection at home. A study revealed that lack of access to fast and reliable internet connection hinders the fluidity and smoothness of online classes, particularly from those far-flung areas (Adnan & Anwar, 2020). For this recent study, it was noted that the respondents have encountered participation-related problems which hampered their full engagement in the online sessions every time the internet connection lags. While this condition is a parallel concern among the regular students, however, the more challenging it was for SSNs particularly those with auditory and visual difficulties. This is true in other developing countries, where the poor infrastructures had derailed the delivery of

intended instruction and eventually affects the learning process of students (Onyema et al., 2020). Albeit the connectivity-related issues were attended by the concerned service provider in this country, somehow, the same had remained partially resolved. Consequently, such circumstance contributed to a lesser reception of pertinent information from scheduled lessons which eventually affect the learning and skills acquisition of the concerned students with special needs (SSN). Thus, the usage of educational technologies to dispense the lessons has been a flexible and an alternative approach to instigate learners to participate and learn (Onyema & Deboarah, 2019). With the learning taking place at home during the pandemic, the implementation of In-person classes has to shift towards a more

appropriate modality that demands usage of the internet in both synchronous and asynchronous sessions. Since the DepEd provided three different delivery modes of learning, some learners and parents from public schools already knew what to do if there is a connectivity issue (Malipot, 2020). Perhaps, the need for a teaching approach that shall

proactively respond to such instructional demands under the new normal, wherein parents and teachers work together, is imperative in effectively delivering the curriculum contents to these SSNs who are deaf and hard of hearing to likewise achieve at least the most essential competencies.

Table 2. Extent of barriers in the implementation of distance learning as perceived by the respondent-groups

Statement	Children		Parents	
	x_c	Description	x_p	Description
The problem of intermittent connection	2.89	Agree	2.87	Agree
The lack of knowledge on how to use the online platforms: Google Class room and Google Form	2.88	Agree	2.86	Agree
Unnecessary loss of internet connection during the class schedule	2.81	Agree	2.78	Agree
Unnecessary blackout schedule	2.73	Agree	2.69	Agree
The lack of equipment for our online class such as Laptop, android phone, or Tablet	2.87	Agree	2.82	Agree
Do not have enough money to buy load for Data/Internet connection	2.91	Agree	2.91	Agree
Insufficient signal in my location	2.52	Agree	2.46	Disagree
Technical issues	3.00	Agree	3.00	Agree
Too bulky chunks of information	2.89	Agree	2.84	Agree
Adaptation difficulties	2.84	Agree	2.85	Agree
Average Weighted Mean	2.83	Agree	2.81	Agree

Legend: 3.26-4.00 Strongly Agree; 2.51-3.25 Agree; 1.76-2.50 Disagree; 1.00-1.75 Strongly Disagree

There are two (2) indicators from this table that both respondent groups agreeably rated to affect the enforcement of distance learning, namely unnecessary blackout schedule and unnecessary loss of internet connection during

the class schedule. A study found out that the latter situation could impact the intended delivery of lessons for those SSNs who are expected to acquire the most vital knowledge and skills during the new normal (Parmigiani et al., 2020). Specifically, in the physical education classes, there are established drills and exercises which demanded the learners to perform and obtain the necessitated competencies. However, the set objectives for

the day's lessons were impeded by some factors that both the teachers and learners must critically consider. One of those factors is shown in the Table 1 result, where the status of internet connectivity has been evaluated to influence the extent of implementation of online learning and engagement among SSNs in online classes. Undeniably, this state of connectivity does pose issues among users to certain extent (Kapasias et al., 2020). Albeit this connectivity issue is experienced by many families from developing countries, however, the parents need to be ready in actualizing the necessitated instruction at home to ascertain continuous learning of these SSNs (bin Nordin et al., 2021). Whether there is a short power outage or insufficiency of signal, it is

imperative that such internet connectivity-identified issues should not be a factor to derail the instructional goal. Empirical studies revealed that inadequate access and the availability of internet resources have confronted the ability of learners to join and engage in such online sessions (Zhong, 2020). In return, real-time sharing of thoughts or information is partially reduced, if not missing at all, given such conditions. Unlike in a normal setting, this case impels the concerned stakeholders to take utmost action in the utilization of suitable teaching-learning strategies as contemporary crisis learning is unique (Toquero, 2020; Pace et al., 2020).

Table 3. Test of significance on the relationship between the extent of barriers in the implementation of distance learning and internet connectivity

Variables in Association	Degrees of Freedom (df)	Computed χ^2 Value (Average)	Critical χ^2 Value	p -Value	Decision	Remarks
Implementation Barriers & Internet Connectivity	6	7.154	12.59	0.30684	Accept H_0	Insignificant

Note: The result is not significant at $p < 0.05$

The correlative inference between the two identified research variables here poses no vital association when statistically treated at 0.05 level. As can be gleaned, the Chi-square test draws out a computed value that is smaller than the critical value at such a degree of freedom. Simply put, this means that the relationship between the extent of barriers in the implementation of distance learning and the status of internet connectivity is insignificant. With a p -value that is larger than the significance level, the null hypothesis must be accepted because there is not enough proof to conclude that the variables are correlated. It was found out in an empirical study that most students with disabilities encountered

difficulties when it comes to internet connectivity and limitations of assistive technologies (Dianito et al., 2021). In fact, it is a common experience of many learners in developing countries where access to online platforms is limited or denied. (Ojetunde et al., 2021). However, the scientific result here entails that the disjunctive form between the two identified variables could be factored out by the manner how the teachers manage, and parents get involved in remote learning. Yet, there are students with disabilities from other countries who were exposed to certain equity issues and challenges brought about by the uneven access to the internet and usage of educational technologies during their online

classes (Smith, 2020). In fact, there were SSNs who often encountered hardship in relaying or expressing their thoughts and needs to their teachers and classmates particularly during the global pandemic (Conrad et al., 2017). This case somehow is different in some developing countries as the articulated issues are well-addressed by their respective parents in the learning process at home (Dianito et al., 2021).

While there are issues arising from the slow internet connectivity as disclosed in Table 1 or those impediments listed in Table 2, nevertheless, with the proactive bearings of these SSNs indeed had resolved the probable implications of the identified variable to the other.

Table 4. Test of Significance on the difference between the perceptions of students and parents on the extent of barriers in the implementation of distance learning

Variables Association	in z-scores	Computed U-value	Critical U-value	p-Value	Decision	Remarks
Deaf & Hard hearing Learners versus Their Parents	0.71813	40	23	0.47152	Accept H ₀	Insignificant

Note: The result is not significant at $p < 0.05$

The scientific result reveals that the computed U-value is greater than the critical value when the data were statistically treated at 0.05 level. Given such z-scores, the inferential outcome suggests that the responses between the groups on such research variables under scrutiny were having an insignificant difference. Plainly, the data entail that the perception of the children who are deaf and have a hard hearing is within parallel bearing with the thoughts of their respective parents as regards the extent of barriers in the implementation of distance learning during the pandemic. With the obtained p-value that is larger than the established significance level, the null hypothesis must be retained as there is no adequate evidence to conclude that the responses are having significant disparity. This implies that when these SSNs express that they are challenged over a slow internet connection during their physical education classes, their parents shared the same concern on such aspects. When the SSNs convey such a need for assistive technologies to support their online engagement, their parents equally thought their vitality in such regards. Despite such struggles that these SSNs have experienced in carrying out their academic obligations through a distance learning modality, they still are able to

accomplish the required tasks. Such perspective can be supported by a recent study that explicated that a positive mindset among the learners had helped them cope with the rigorous demands of such online classes (Dianito et al., 2021). Accordingly, previous research posited that students, who are ready to experience a new learning landscape, allow them to adopt and pay more attention during online classes (Wattjatrakul, 2016). This finding somehow was backed up with another study which pointed out that a student who was exposed to the diverse forms of learning experience flexibly learns best when their visual learning style is holistically facilitated via online modality (Putri et al., 2020). The change of delivery mode of learning is a tough quest academically not only for educators but for learners and parents, too. It was found out that parents of those SSN have encountered considerable hardship in backing up the educational activities via online mode (Parmigiani et al., 2020). With this, it is practically certain that whatever these SSNs have experienced, their parents, too, similarly underwent the obstacle in dealing the distance learning during the global pandemic.

IV. Conclusion

The findings of this study had led to the following inferences: that in terms of internet connectivity profile, the majority of both respondent groups had a slow internet connection. The barriers encountered in the implementation of distance learning were: technical knowledge in troubleshooting technological issues of the computer; do not have money to buy load for data/internet connection; too bulky chunks of information; the problem of intermittent connection; the lack of knowledge on how to use the online platforms: Google classroom and Google form; the lack of equipment for our online class such as laptop, android phone, or tablet; and adaptation difficulties of the new education delivery approach. There was no significant relationship between the extent of barriers in the implementation of distance learning and internet connectivity. Lastly, there was no significant difference between the perceptions of students and parents on the extent of barriers in the implementation of distance learning. This proved that the respondent groups' perceptions of the extent of the identified in the implementation of distance learning were of the same level, rendering such perceptions to be reliable. It was recommended that the identified barriers should be given immediate consideration in policy formulation to enhance the delivery of distance learning among deaf and hard of hearing students amidst the pandemic.

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