

## Seeding Change: The Suggestions of the Graduate School Students to Improve the Internet Facilities and Services

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### Abstract

This study aimed to find solutions for the difficulties encountered by the graduate school students with university internet facilities and services. The qualitative method via phenomenology was used. There were 21 participants, including 10 for an in-depth and 11 for FGD interviews. Findings revealed that on the first enquiry there were two major themes identified, namely internet access and limited internet facilities and services. Core issues such as network low bandwidth, slow internet connection and limited use of Wi-Fi technology were indicated while on the second lens, core ideas issues such as an inadequate internet laboratory, a limited number of computer units and a lack of manpower were noted. On the second enquiry, highly accessible and robust internet infrastructure in support of a research culture and additional library and internet facilities and services emerged as major themes. Relative to the first theme, core ideas on a PS dedicated server – global cloud and dedicated server hosting, Wi-Fi zone university campus, and Wi-Fi-ready classrooms were indicated. The next theme, core ideas such as comfortable and convenient library internet rooms, creating a learning commons facility, increased subscriptions to educational data-based material in addition to ProQuest and eBrary, mobile technology services, computer laboratory with printers and increased numbers of professional librarians were additional suggestions. The results implied a call to the university policy makers and top level management to improve the internet facility services in the university.

**Keywords:** qualitative research, phenomenological inquiry, internet services, research activities, internet facility improvement

### 1. Introduction

To realize the vision to which the world has agreed by 2030, access to the internet is essential for the advancement of teaching and learning. Numerous avenues exist for it to raise educational standards. As a result, there are more opportunities for learning inside and outside of the classroom. It opens doors to a plethora of knowledge, information, and educational resources (Dogniez, 2019).

This research study conducted on the use of internet facilities has revealed many sentiments expressed by the graduate school students of the university. They shared their problems encountered with inadequate internet facilities and services. Computer internet laboratories cannot accommodate them all. Furthermore, the connection was very slow, information was overloading, Wi-Fi technology use was limited since the password was protected, while the limited number of

computer units shared by the undergraduate, postgraduate, and research level students in computer laboratories have crippled online research activities.

It can be deduced from these problems that this endeavor complements this present phenomenological review on seeding change. Certain studies on the challenges of students in online learning in the Philippines depict this problem. One of such challenges is the fact that 82 or 62 percent of the 132 people who use a desktop or laptop have unlimited data connection. There were 48 or 36 percent of the remaining data connections that are prepaid and many do not have access to the internet (Fabito et al., 2017). In dire need of fast internet connectivity for research purposes, students proposed several suggestions to address the problems encountered. The respondents were of the opinion that the university should invest in a high-speed internet connection with the greatest bandwidth to address the issue of slow internet access (Jibrin et al., 2017).

The need was highlighted for the university to upgrade its internet infrastructure for research literature as the provisions of accessibility would have significant academic advantages. It would contribute in no small way to satisfying students' research requirements successfully. The suggestions of the respondents would hopefully be a wakeup call to the administrators and top-level management and pose a challenge to lecturers, the university libraries as well as the educational policy makers.

### **Grand Tour Questions:**

1. What are the problems encountered by the graduate school students in accessing the internet?
2. What do the graduate school students propose to address the problems and improve the internet facilities and services?

## **2. Method**

### **2.1 Participants**

There were 21 participants from the graduate school students who were divided into 10 in-depth and 11 for FGD interviews. The interviews took place in their respective homes and desired places of preference. Using a purposive sampling technique, they were selected on the basis of their enrolment in the professional schools. There was no limit as to their age and their gender as long as they were voluntarily participating in the study.

The data gathering was reinforced by the use of interview guide questions carefully formulated to elicit more responses from the informants. Probing questions were used to obtain more ideas from the interviewees. The process was repeated until the data gathered had reached saturation. Recorded data collected were transcribed into a Word document for data analysis.

### **2.2 Design**

A qualitative method via phenomenology was used. Phenomenology is concerned with the meaning of real world experiences toward a given phenomenon (Cresswell, 2007). To represent better understanding of the idea, Willis (2007) simplified the perception that phenomenology as a method construes experiences through attending to and listening to the numerous storylines of the participants. Additionally, Cayogyog and San Jose (2011) explained that the phenomenological approach which was used tries to understand the participants' lived experiences. Moreover, Van Manen (1997) noted that the focus of phenomenological inquiry is to discover the essence of the lived experiences. Research approval was sought from the Dean of the Graduate School for ethical considerations. The four constituent elements, namely disclosure, comprehension, competence, and voluntariness (Sim, 2006) were emphasized in seeking informed consent from participants.

Data were collected, tabulated and analyzed to contextualize the propositions of the graduate school students to improve the internet facilities and services of the university.

### 3. Results and Discussion

As the lived experiences were examined of the 21 graduate school students in using the internet facility at the university, their difficulties and challenges in using internet facilities on the campus emerged.

**Table 1: Graduate school students’ problems encountered in accessing internet facilities and services**

Major Themes	Core Ideas
Internet Access	Network low bandwidth
	Slow internet connection
	Limited use of Wi-Fi technology
Limited Internet Facilities and Services	Inadequate internet laboratory
	Limited number of computer units
	Lack of manpower

**3.1 Problem with Internet Access.** In this lens, three core ideas identified as network low bandwidth, slow internet connection and limited use of Wi-Fi were identified. The difficulties presented were given corresponding solutions as clearly suggested by the participants in the next table.

**Network Low Bandwidth.** A participant expressed his frustration that the internet facility has low bandwidth that contributed to their delayed submission of class requirements. Owing to slow network performance, his online requests were not dealt with promptly and searches were not immediately accessed. Another participant mentioned having to wait for a high bandwidth connection that could serve many requests and users without sacrificing precious speed. There were also problems with articles and other related materials that were accessed but could not be downloaded. Transferring of data accessed was difficult. All these could be attributed to low bandwidth.

A research study by Dilroshan (2019) mentioned the low bandwidth of internet causes slow internet connection and leads to problems. In support, Allen (2016) said that since the rise of virtualization and cloud computing, networks have become strained and bandwidth issues have come to the forefront of technology problems.

**Slow Internet Connection.** In pursuit of higher learning, students’ access to internet facility is required to reinforce research process. However, due to slow connectivity students had some difficulties in completing course work. This was supported by Siddiquah and Salim (2017) who reported that the majority of students experience issues with load shedding, slow computer speed, internet signal issues, a shortage of computers and PCs in poor condition, slow internet connection, and signal problems.

**Limited Use of Wi-Fi Technology.** The students were compelled to use the Wi-Fi installed at the professional schools’ lobbies; however, this does not help much for their research work. The connection was password protected, very slow and could not be accessed from remote locations. The participants expressed disappointment towards the deficiency in internet connectivity of the

university which greatly affected their studies. A research study conducted explained the disadvantages in using Wi-Fi technology as its speed is not as fast as wired technology. Its transmission uses radio signals which can be easily interrupted and user's information on the air could easily be hacked and misused (Sandhu et al., 2013).

**3.2 Problem with Limited Internet Facilities and Services.** The university internet laboratories cannot support the actual research needs of students. A participant said that a laboratory internet connectivity supposedly must reinforce speedy access to a market of instructional applications that are rapidly expanding and are updated on a daily basis. However, school facilities are not always in a good condition and educational sites are not always available. In India, Kaur (2015) reported that libraries do not have facilities, not to mention cutting-edge computer laboratories with enough nodes for every student to access the internet and other web-based resources to support digital learning. Likewise, another study mentioned that the scenario was the same in Sri Lankan libraries which lack infrastructure and hardware facilities. Computer printers are not in a good condition and frequently malfunction (Dilroshan, 2019).

***Inadequate Internet Laboratory.*** The internet laboratory must be adequately equipped to cater for the students' research needs and learning. This supports what Amaoge and Igwebuikwe (2016) mentioned, namely that the internet is a constant resource for learning, teaching, and research in the field of education. As an avenue towards research access, the internet laboratory must be able to support the students' needs regarding knowledge acquisition. It must be there to help students to gain access to the information world to facilitate their studies and academic projects. However, internet laboratories in the university were inadequate: one participant opined that he was disappointed when using the internet laboratory that services did not give him much satisfaction towards conducting research.

***Limited Number of Computer Units, Mobiles, Tablets.*** With the increasing number of students supposedly using the internet, computer units and other technology installed in laboratories cannot accommodate them all. The same problem was faced by some universities outside the country when Kaur (2015) said that because the computer laboratories and libraries were inadequate, students were unable to obtain practical experience owing to a lack of available computer units. A participant reported that he was disappointed because he had gone to the internet laboratory in the library hoping to log in for research purposes but there was no vacancy. All units were occupied, and students were lining up waiting for their turn to log in. The number of computers provided could not accommodate all the students wanting to use the internet.

***Lack of Manpower.*** One participant explained that library personnel could not entertain all the queries from patrons. At times he consulted a librarian about a research topic, but when the librarian was about to assist to him, another group of users also approached the librarian for assistance. This limited the amount of time the librarian could deal with his request. There is a shortage of librarians in the university. Some of them are not well-versed in searching for information for research topics. The library lacks computer technical staff such as instructors, as well as bandwidth or fast internet connectivity, printing facilities, and training programs which should be provided (Salonik, 2019).

#### **4. Graduate School Students' Suggestions to Improve the On-campus Internet Facility and Services**

Internet is the most sought-after information and communication tool that has brought about a fundamental shift in the information landscape on a global scale. Therefore, the success story that led to the development of the internet is not surprising. Because of this, the internet has today

connected countries and businesses globally. Therefore, the internet and references to the world have reduced what appears to be physically known as the global village

As an upshot to the sequential investigation conducted on the lived experiences of the students in accessing the internet facilities, they were questioned relating to their suggestions to improve the internet facility and services inside the university.

From those issues they willingly shared, they proposed two significant concerns with regard to internet facility and the problems they had encountered while accessing the internet. Two suggestions emerged, namely highly accessible and robust internet infrastructure in support of a research culture, and additional library facilities and services. These were proposed with the fervent hope that the administration would address these issues, thereby facilitating their studies significantly. .

**Table 1: Graduate school students’ propositions to improve the on-campus internet facility and services**

Major Themes	Core Ideas
Highly accessible and robust internet infrastructure in support of research culture	PS dedicated server - global cloud and dedicated server hosting
	Wi-Fi zone university campus
	Wi-Fi-ready classrooms
Additional library and internet facilities and services	Comfortable and convenient library internet rooms
	Creating a learning commons facility
	Increasing subscriptions to educational data-based in addition to ProQuest and ebrary
	Mobile technology services
	Computer laboratory with printers
	Increasing the number of professional librarians

#### 4.1 Suggestion No.1 - Highly Accessible and Robust Internet Infrastructure in Support to Research Culture

The first proposal, namely the graduate students’ desire for improvement, was positioned on three particular areas, namely PS Dedicated Server – Global Cloud and Dedicated Server Hosting, Wi-Fi Zone University Campus and Wi-Fi Ready Classrooms.

### ***PS Dedicated Server - Global Cloud and Dedicated Server Hosting***

The graduate school students, in their desire to have high speed internet connection, proposed a single dedicated internet service. This is confirmed by the study conducted, namely that dedicated internet services are essential for private or virtual private network systems over a wide geographic zone, and for empowering the safe and reliable exchange of information among areas, including the arrangement of a committed web to have access to innovative broadband services.

Business establishments, government organizations, hospitals and medical workplaces as well as schools and libraries use them to set up their own private network systems and to access various applications such as Voice over IP (VoIP), internet access, TV, cloud-based hosting services, video conferencing, and secure remote access.

One student proposed that in order to have good connectivity, the university needed to upgrade the internet connection using the PS dedicated server or the Global Cloud exchange for better dedicated server hosting. Another informant added that due to slow internet connection on the campus, he had some difficulties in accessing information he needed in order to complete his research projects. There was a complaint that even if they had their own laptops or internet-ready mobile phones, owing to poor connectivity, the browsing was really slow and they had to wait for a long time before they could gain access. Students suggested having a dedicated server hosting on the campus. Because of its flexibility, it could handle the increasing demand for IP-based applications, internet access, and data exchange. All of these call for faster bandwidth. In this connection, Ross (2015) reported that in June 2013, President Barack Obama of the United States unveiled his ConnectED project, which has a five-year goal of giving almost every school in the nation a high-speed internet connection. Internet connectivity with high speed is perceived to be more helpful and can enhance research by being faster, easier and quicker in responding to research queries.

### ***Wi-Fi Zone University Campus***

The presence of Wi-Fi in various public places has changed the face of internet connectivity. Apart from the significant benefits that connections could be accessed with significant mobility, the old system of accessing connections has changed the way it affected the users' communication patterns.

In his dire need to have a Wi-Fi connection on the campus, a study participant proposed to the university that Wi-Fi zone be expanded equitably to all colleges in the university. This should include the graduate school premises so that all students who desired to work on their research could do so on campus. Another one added that, apart from safety concerns, it was more economical and reliable. If a Wi-Fi zone connection were provided in the graduate school premises, students would be updated with the new educational trends and practices as they emerge. This suggestion was raised after he further mentioned his unfortunate experiences with internet connectivity both on and off the campus. He said that at times when his access to the university internet connection was unsatisfactory and he resolved to gain access off campus, he had to deal with the power supply blackouts, as well as drunk men in the internet cafés occasionally causing trouble to users.

Since 2011, Wi-Fi has become the selling point in higher education. It was reported that 60 percent of students had Wi-Fi connectivity and avoided schools without Wi-Fi connection. In 2014, universities in the United States reported that 97 percent freshmen anticipated that wireless connection was already available upon entry which meant an increase by 16 percent from the

previous year (Hassig, 2015). In addition, Wi-Fi zones were set up where students could have free internet access on campus. The significance of web accessibility in the dissemination of knowledge and learning cannot be over-emphasised. An institution of higher learning, whether school, college or university, without free and unhindered web access for students nowadays is deficient (The Times of India, 2016).

### ***Wi-Fi Ready Classrooms***

A research participant mentioned that the access to the internet at the university was restricted to some specified places which hampered internet connectivity to many students. The only places where they could use the internet and where learning resources were available were found in the professional schools' lobbies, libraries and computer laboratories. He wished that Wi-Fi connections could be available in the classroom so that they would not be pressured to opt for off-campus services. The same proposal was mentioned in terms of the difficulty he encountered in accessing the internet outside the university as an alternative source for his research. He earnestly wished for internet connection in the classroom.

A study conducted by Ruckus Smart Wi-Fi technology recommended strong and dependable connections necessary to deliver dependable and quick Wi-Fi connectivity in classrooms, laboratories, dormitories, and anywhere else on campus. It is best suited for large-capacity higher education environments (PR Newswire, 2015).

## **4.2 Suggestion No. 2 - Additional Library and Internet Facilities and Services**

In line with the second suggestion, the graduate students' desire for improvement centered on five specific areas such as comfortable and convenient library internet rooms, creating a learning commons facility, increasing subscriptions to educational data-based in addition to ProQuest and e-brary, a computer laboratory with printers, and increasing the number of professional librarians.

### ***Comfortable and Convenient Library Internet Rooms***

The participants were asked to think about what their ideal internet room library would look like. One respondent proposed that he would like the university to provide library internet rooms equipped with computers, fully air-conditioned, well-ventilated, and well-lit. In addition, one wished for a university to provide a library with spacious reading areas and an electronic library for researching with high-speed internet connection. A library room where online internet services are on par with other university libraries was also high on the list. In the focus group, a common sentiment in the discussion was the need to keep areas that are computer-focused far from the main reading or lounge areas in order to reduce noise and other distractions.

Another participant added that he wanted to have comfortable internet rooms in a separate library for graduate school for students' use. In support of this request, the participant-researcher of this study had joined this advocacy as a graduate student in the professional schools to request the university to consider building a separate library for graduate school students. A library with continuous high-speed connection to the internet and the provision of web services could be convenient to all students. As Bwalya (2014) observed, in terms of service delivery, the internet and the world-wide web have undoubtedly strengthened the position of many libraries. Libraries that are prepared to take advantage of these facilities, they have created enormous opportunities.

### ***Creating a Learning Commons Facility***

During an in-depth interview, a participant explained the concept of a learning environment. He described a sort of 'coffee shop' feel or 'living room' atmosphere, a safe and affordable hangout location where he could mingle with other students or classmates if he wanted to. One of the participants in a focus group stated that a library should feel like home and include a place for patrons.

Another participant agreed that libraries should be less stuffy and more inviting and comfortable. She believed that offering different reading and studying alternatives acknowledged the fact that different people have different preferences.

The graduate school students proposed a learning area where they could study, share views and collaborate with other students or classmates on a certain project. This could become a common place where students studying the same course could get together. This is what a learning commons facility is all about.

The students' request to have learning commons was reinforced by Kompar (2015) who confirmed that the vision of a learning commons vision is to provide a shared space for curricular work and quiet exploration as well as nurturing students' interests, passions, and imagination. The learning commons includes specific areas that are flexible and provides space for students to support learning needs. The space includes moveable furniture and areas for large-group instruction/meetings, as well as areas for innovative programming, reading nooks, small collaborative spaces, independent work stations, and a makerspace.

As emphasized by the study of Kohout and Gavigan (2015), the transition from the traditional library media center to a learning commons was a paradigm shift to make the library media centers relevant to the needs and goals of academia. The learning commons concept emphasizes collaboration, creating and sharing knowledge, and creating a space and learning environment for school community members to receive help and coaching.

### ***Increasing Subscriptions to Educational Data-base Resources in addition to ProQuest and e-brary***

One of the participants indicated that he was busy as a librarian and students wanted more hours of service. However, they were unaware of online resources. One participant shared the excitement of students about the availability of e-books, e-journals databases, and online classes. Nevertheless, unless they were personally informed of these, they mostly did not know about these available resources. One of the focus group members indicated that he would be most appreciative if libraries provided services such as after-school study sessions, tutoring, and assistance with homework.

A graduate school library science student who participated in the study felt that students were not always aware of the resources that librarians could offer to help with their research. She explained that often a patron would troll through the internet for hours trying to find an information source that the librarian could have provided in a matter of minutes. A librarian-participant emphasized that most users did not know about the research e-resources offered by the library other than books. Most students have no idea what a database is and therefore get their information from Google, while the resources available on the online database such as ProQuest, e-brary, Cengage, InfoTrac, and Wiley are unknown and unused.

This had been clearly articulated in the study of Koc and Ferneding (2013). They contended that students do not explore a topic on the internet, or in the physical library, and never do their own research, which is the real purpose of an assignment. It seemed that despite the internet making the process of finding information so easy and simple, it was also easily misused to plagiarize, which leads to significant legal and moral issues.

### ***Mobile Technology Services***

It was mentioned that libraries could better publicize information content that could likely assist students in their assignments. They could use customized mouse pads to advertise URLs for



selected information resources. Libraries also need to think about new services using mobile technology such as cellular phones. They might allow students to reserve group study rooms and be alerted to availability via their cell phones as well as sending simple text message queries to library catalogs, databases, or checking library hours via text messaging (Bankole, 2013).

### ***Computer Laboratory with Printers***

Study participants requested more computer laboratories with printers in the university. They indicated that prompt compliance with all class work would be hastened when the laboratories are well equipped with facilities. They dreamed of a student computer laboratory that would be an ideal place to complete assignments, check email, or just surf the net. This should be a separate internet library to avoid congestion of students in the main library. One added that he wished that each department could be provided with computer units, a printer and a scanner for students' use.

### ***Increasing the Number of Professional Librarians***

It appears that the shortage of librarians was becoming a problem. Moreover, that wave of librarian retirements that had been predicted for the past few years seemed imminent. This shortage of manpower in the librarianship profession was meant to entice students into enrolling for this course. Many library science graduates would get jobs. In today's information age, a librarian as an information specialist is urgently needed in academia. This role has been changing from that of a traditional keeper of books in the library to being proficient in the use of technologies to support the research culture and other academic research endeavors.

In view of the above, a participant involved in this study expressed the need for increasing the number of professional librarians. He further stated that the organization of resources and sharing and distributing information to clients lies with a knowledgeable librarian. Another participant also believed that librarians are skillful in managing information and deserve better salaries. There was a participant who is a librarian by profession. He clearly elaborated that an inventory of library needs projected a shortage of librarians. In addition, he had made three proposals to the university administration for librarians' retention, namely offer scholarships, secondly, offer employment; and thirdly, pay higher salaries.

In the interview, the reasons given for the preference of the internet are that it gives more current information, does not waste much time in retrieving the required information, and it is easier and more convenient to obtain accurate information. Those that preferred the library indicated that the information from a library is more authoritative and reliable, that there are librarians to assist in case help is required, and it is cheaper to photocopy materials from the library than printing materials downloaded from the internet (Bankole, 2013).

### **4.3 Implication for Practice**

Two propositions were endorsed by the graduate school students in their desire to improve the internet facilities and services of the university. This implied that the University of Mindanao should take action to address the need for significant improvement in internet speed to ensure fast and efficient use of internet services.

Issues of slow connectivity and limited accessibility were experienced by the student users. These constrained their easy and fast access to needed data. Further, these resulted in their inability to complete classwork within deadlines. They felt despair and discontentment, knowing these privileges could have been accorded them. To address these concerns, they proposed a highly accessible internet connection with fast internet connectivity, Wi-Fi accessibility throughout the

university campus, limitless accessibility, adequate internet facility and services, and high bandwidth.

The university libraries and internet rooms were overcrowded with students every day, especially during examinations and just before deadlines. There were also limited areas for study and project making. Furthermore, too few personnel were available to address their queries. Users' expectations of support from the library personnel were thus unmet. This was what the users regularly experienced.

In terms of provision of services to the students, the participants requested comfortable and convenient library internet rooms, supplied with furniture and equipment to meet users' needs. They also proposed the creation of a learning commons facility, a 21<sup>st</sup> century library innovation, a place that would encourage participatory learning for discussions and sharing.

The students' proposal to have a learning commons facility is supported by a study indicating that the learning commons' mission is being expanded, and both the physical and online learning commons benefit from a wide range of professional competence. The learning commons develops into a one-stop center for assistance and peer cooperation and support on a variety of levels.

To the administration, there is a cohesive cadre on board to contribute to the school's overall drive for greatness (Loertscher & Koechlin, 2014).

This implied that the University of Mindanao should take action to address the need for significant improvement to serve thousands of students on 11 campuses in Davao Region. It is necessary to regain students' trust and confidence in the university's credibility as a center of excellence. Efforts should be made in terms of addressing the internet speed which must be significantly improved to guarantee quick and effective use of services; providing adequate facilities and services to students and teaching staff on the two campuses; and increasing the internet bandwidth in order to ensure speedy access.

#### **4.4 Implication for Future Study Limitations**

The findings of this study have restricted validity because of its limited scope and the limited number of study participants. The study was thus confined to the focus group discussion and in-depth interviews. In the middle of the interview, one participant hesitated to answer some of the questions raised. That was disappointing but a valuable lesson was learnt about flexibility in doing research.

Future research should consider increasing the number of participants to provide better and more convincing implications if the same study were to have a sequel. Future research could possibly be extended to undergraduate, or post-graduate students and teachers at the university.

#### **5. Conclusion**

Graduate school students were unhappy with the university's computer facilities, lack of computers, sluggish internet connection speed, and inadequate internet service. The ability to use internet technology effectively could be constrained by these conditions. Consequently, the vast majority of graduate students in the university felt they were not afforded the opportunities offered by the internet facilities inside the campus.

The study's findings may be helpful to university and library administrators in their efforts to provide improved internet facilities for students. to use online information sources and services

more effectively for professors and other users on the university campus. Specifically, major recommendations might be of help for the university to consider for more enhanced internet users' support services.

The university should make efforts to increase the speed of the internet access, and provide uninterrupted access to the internet on campus. They should also provide adequate facilities such as more computers with the latest specifications and multimedia kits at various university departments. Further considerations are the provision of comfortable, convenient and spacious areas in the library, as well as a learning commons facility. Furthermore, regular reviews with training programs should be conducted for proficiency with computers and the internet. The formation of a consortium could also be considered to work together and lobby internet service providers (ISPs) for more affordable bandwidth packages. Further suggestions include engaging library personnel with the necessary computer know-how; advocating for the proper use of bandwidth; conducting periodic inspection of the facilities; equipping users with adequate user skills; and developing strategic policies aimed at effective optimization. This will ensure that users are informed of new techniques and opportunities that characterize the ICT world.

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