

Stakeholders' Level of Satisfaction Towards Internet Accessibility and Connectivity in WPU External Campuses

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Abstract

Aim: The study was conducted to assess the stakeholders' satisfaction with internet accessibility and connectivity at Western Philippines University.

Methodology: The study used descriptive research to determine the stakeholders' satisfaction with internet accessibility and connectivity at Western Philippines University. It employed Google Forms to gather the data among respondents. Furthermore, the respondents were chosen using purposive sampling where each of the various campuses was properly represented as to faculty, staff, and students. Moreover, the data were analyzed using frequency and percentage. Additionally, the data were analyzed and interpreted using narrative analysis.

Results: Results showed that in terms of internet access, stakeholders reported that they have access to the internet at school, with the majority of them using a VSAT internet connection. They connect via the university's or school's Wi-Fi. As a supplement to the university's current internet connection, stakeholders have agreed to bring their gadgets to school for internet access and connectivity. As to internet experiences of WPU stakeholders on topics such as internet service provider, connectivity, reliability, and speed, its internet provider has been rated as very good (43.5%), and its connectivity has likewise been rated as very good (47.7 percent).

Conclusion: It is a potential to use the internet as a medium to provide education that is flexible, inventive, and oriented on the needs of the individual student. Because it is less expensive and more convenient for students to take their classes online, this mode of instruction is well suited for use in more remote and rural areas. E-learning, as a method of instruction, has several challenges that need to be conquered before it can gain widespread acceptance and use. The implementation of e-learning may be successful if a strategic plan is developed and if technology is seen as a positive step toward development and advancement.

Keywords: Internet Access and Connectivity, Satisfaction, Descriptive Design, Higher Education, College Students

INTRODUCTION

Online learning has become a significant tool for curriculum delivery globally because to COVID-19 safety standards (Elshami & Taha, 2021). Online learning provides quick access to information, appropriate content distribution, content standards, tailored training, self-pacing, interaction, and convenience. Online learning has helped institutions keep their doors open for students throughout the COVID-19 epidemic. Moreover, HEIs throughout the globe have had to cancel face-to-face instruction, shut campus facilities, and relocate staff and students so that they may work and study from home due to the COVID-19 epidemic (Cullinan et al., 2021). Many higher education institutions (HEIs) have continued to offer online and/or blended learning courses because of the prolonged nature of the epidemic. But there are worries about the disparity in student access to digital learning materials, such as internet connection, while they are at home. This is crucial, since connection might affect the sort of online/blended model that professors can give or hinder student interaction with online material.

One such issue is the potential difference in access to digital learning resources for students that reside at home, rather than on or near campus, in an online delivery context. Such a divide may be driven by a range of factors, including gaps in access to appropriate equipment, such as a laptop or desktop personal computer (PC), a suitable home environment to learn/study in, or the digital literacy skills required to engage with online learning. Furthermore, differences in the quality of broadband connectivity for students living at home, as opposed to on campus, is likely also an important consideration in this potential divide. Given the catchment areas of many HEIs cover both urban and rural areas, variation in connectivity may impact the type of online/blended model that staff can deliver or constrain certain groups of students from fully engaging with online-based content. Within this context, this paper considers college students in the Philippines at risk of poor access to high quality internet connectivity due to poor broadband coverage.

On the other hand, college, and university campuses in several different nations have been shut down as a preventative measure to reduce the likelihood of the virus spreading further (Cleofas & Rocha, 2021). Most educational institutions, including schools and colleges, have moved their courses entirely online. It has been difficult to adjust to the rapid shift that has taken place in the school system in the Philippines in the middle of the epidemic. Moreover, in response to the demands of students, particularly those enrolled in about 2,400 HEIs, certain HEIs in the nation have adopted proactive policies for the continuation of education notwithstanding the shutdown (Joaquin et al., 2020). Modified kinds of online learning are part of these regulations, which are intended to make learning more convenient for students. Asynchronous, delayed-time activities, such as pre-recorded video lectures and time-independent assessments, may be used in online learning as synchronous, real-time lectures and time-based outcomes evaluations. Domestically, in the Philippines, the use of internet is very important for higher education activities in instruction, research, and community extension. Despite the epidemic, Western Philippines University administration provided internet access to its seven campuses in Quezon, El Nido, Tatay, Rio Tuba, Canique, Busuanga, and Culion, allowing students and teachers to continue their classes and school operations. HTech Corporation, Western Philippines University's internet provider, has consistently addressed the teachers, staff, and students' digital problems. However, no research has been done to date on the opinions of its academics, staff, and students about its connectivity and accessibility, thus the study would be a significant step forward in improving its services. Furthermore, using the data acquired from the survey, the study will deliver better services to its digital education. The study's findings will eventually be used to establish improved systems and processes aimed at strengthening the company's basic functions of providing smooth internet access to all stakeholders. This is entirely consistent with the university's push for better internet connectivity in order to provide a more sustainable education, whether or not there is a pandemic or other health-related disaster.

Review of Related Literature

There are three basic types of elements that determine student and faculty satisfaction with internet access and connectivity: faculty, interaction, and technology and students, instructor, and institution. Both students and faculty's well-being are intertwined since student happiness is influenced by both human connection and technological advancements, both of which need more effort on the part of faculty members to engage students online. One research revealed that there were no differences in online learning satisfaction between men and women, while another found that female students were more pleased than male students. On the other hand, internet learning comes with a slew of benefits and drawbacks. Some of the grounds for online pedagogy include accessibility, cost, flexibility, learning pedagogy, lifelong learning, and policy (Dhawan, 2020). Online education is touted as being both convenient and capable of reaching students living in rural and isolated places. In terms of transportation, lodging, and the total expense of studying in a classroom, this is a less expensive option. Students may also arrange or manage their time to complete online courses, which is an intriguing component of online education. There are several benefits of blended and flipped classrooms, which combine classroom instruction with online resources, such as blogs and wikis (Zainuddin & Halili, 2017). Students may pick up new knowledge and skills at any time and any place, paving the way for on-going education for the rest of their lives. Additionally, the Philippines government acknowledges the growing relevance of online learning in this ever-changing environment. Just as no single learning theory has emerged for instruction in general, the same is true for online education. Several theories have evolved, most of which derive from the major learning theories discussed previously. Several theories are examined. Picciano (2020) examined the possibility of building a theory of online education, starting with the assumption that it would be a difficult and perhaps impossible task. The use of the internet grants its users great awareness of the importance of the world around them. The internet is a platform for several types of information. Internet use will continue to grow if its users are not denied easy access. Recent statistics indicate that the internet gives people the option to access information sites as well as other sites such as social media sites, internet games, and cyber-sex (Dahiya & Rokanas, 2021). A study on the influence of internet use on academic performance and face-to-face communication revealed that because of the availability of the internet, most students have had access to the internet on their cell phones (Almahasees et al., 2021). This helps students to broaden their academic information, the use of computers and access to online resources is comparatively important to students.

To prepare people for the future, the internet and education have merged. Enhanced, blended learning and the online method are the three primary ways of online teaching identified by Stec et al. (2020). The heavy use of technology in enhanced learning ensures creative and engaging training. Blended learning combines face-to-face instruction with online learning. Since this course is taught entirely online, it is referred to as an "online method." Students benefit from online education because they have access to information 24 hours a day, seven days a week. As a result, students are actively involved in the learning process, and professors serve as mentors and guides for pupils.

Online platforms, on the other hand, provide a variety of tools for conducting online interactive lessons to minimize the number of students who drop out. It is the goal of online education platforms to facilitate the exchange

of knowledge and the coordination of class activities (Siripongdee & Pingdee, 2020). Interactive online tools such as DingTalk (an interactive online platform designed by Alibaba Group), Hangouts Meet (a video calls tool), Teams (a chat platform that includes interactive meetings), Skype, WeChat Work (a video sharing and calls platform for the Chinese), and Zoom are some of the most popular (video and audio calls, and collaboration features).

Moreover, several studies were conducted in the Philippines, and the results indicated conflicting attitudes on internet access and the use of electronic gadgets or devices for online education. These findings are relevant to the local context. A reliable internet connection was found to be one of the three obstacles and problems that students faced while participating in online learning, according to the findings of a research that was conducted by Fabito et al., (2021). Another idea that is connected to this one comes from (Casillano, 2019), which states that only a small percentage of students have access to the internet, which prevents them from using the e-learning platform. With the increase in use of online modalities during COVID-19, it is necessary to assess the satisfaction of various stakeholders towards the accessibility and connectivity of internet to teaching and learning among students.

Theoretical/Conceptual Framework

The study is anchored on the Social Theory of Internet use based on the concepts of scale of consumption, technological, social, and information linkage needs of individuals. Moreover, social Theory of the Internet focuses on everyday uses and effects of the internet, including information seeking and big data, and explains how the internet has gone beyond traditional media.

Exposure to new technologies provides many benefits for everyone. It also includes the benefits that can be gained by students through the development of the internet as a medium of learning. Additionally, through the use of the Internet, students can familiarize themselves with the internet, it can be beneficial for those who want to take the chance. Most of the students adopted digital media as a place for those seeking information materials, as the main source of current issues as well as a platform for sharing information with partners such as through social networking sites. Therefore, the use of the internet makes it easier for students to obtain the desired information easily and quickly. This facility will make students more motivated to search for information more often. Therefore, the use of the internet will be a factor that will affect the academic performance of students. However, if the use of the Internet is not controlled properly, it will have a negative impact on students' academic performance. But, if the student can better manage Internet usage, it will have a positive effect on their academic performance of students. The role of the internet that allows access to e-book, search for information easily and assist students in completing tasks. This will be significant in increasing student academic achievement. This is based on (Ward et al., 1996) academic performance or achievements are the results of the study to see how far a student, teacher, or institution has achieved their educational goals. This indicates the impact of the Internet on academics refers to how Internet resources and services helped students improve learning, search information to complete their tasks, and other.

Moreover, the study is guided by the conceptual framework below:

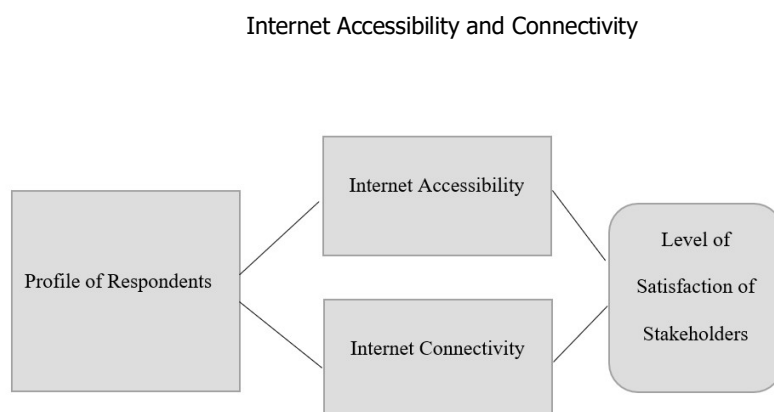


Figure 1. The Research Paradigm

Figure 1. The Research Paradigm

Objective

The study was conducted to determine the stakeholders' satisfaction to internet accessibility and connectivity in Western Philippines University.

METHODS

The study used descriptive research to determine the stakeholders' satisfaction to internet accessibility and connectivity in Western Philippines University. It employed Google Forms to gather the data among respondents. Furthermore, the respondents were chosen using purposive sampling where each of the various campuses were properly represented as to faculty, staff, and students. Moreover, the data were analyzed using frequency and percentage. Additionally, the data were analyzed and interpreted using narrative analysis.

RESULTS and DISCUSSION

The study presents the results of the study from the lens of various stakeholders of Western Philippines University.

Table 1.

Profile of the Stakeholders (n=23)

| Profile | Frequency | Percentage |
|---------------------------------|-----------|------------|
| Sex | | |
| Female | 16 | 69.6 % |
| Male | 7 | 30.4 % |
| Type of Stakeholder | | |
| Faculty | 19 | 82.6% |
| Staff | 4 | 17.4% |
| Locale of Respondents | | |
| Quezon Campus | 7 | 30.4% |
| Rio Tuba Extension School | 4 | 17.4% |
| Busuanga Campus | 4 | 17.4% |
| El Nido Campus | 3 | 13.0% |
| Culion Campus | 2 | 8.7% |
| Canique Taytay Extension School | 3 | 13% |
| Programs | | |
| Faculty | 9 | 39.1% |
| Staff | 3 | 13.0% |
| BSHM | 2 | 8.7% |
| RDM | 2 | 8.7% |
| BSED | 1 | 4.3% |
| BSA | 1 | 4.3% |
| BSA Laadd | 1 | 4.3% |
| CAS | 1 | 4.3% |
| BS Crim | 1 | 4.3% |
| Others | 1 | 4.3% |

The majority of the responses in the table are female (69.6%). Moreover, the stakeholders are mostly (82.6%) faculty members. On the other hand, the stakeholders are evenly distributed in seven campuses of Western Philippines University. Furthermore, the majority of the participants in the study are faculty members who are spread across the university's programs.

Table 2.

Internet-Related Questions

| Questions | Answers and Frequency | Percentage |
|---|---|---|
| 1. Do you have internet access at school? | Yes = 23 | 100% |
| 2. If you have internet access at school, what type of access do you have? | Satellite VSAT Connection=18 | 78.3% |
| 3. Do you have Wi-Fi at school? | Yes = 20 No = 3 | 87% 13% |
| 4. If you do not have internet access at school, where do you go to get access? | I used my own device = 16 I have internet access in school = 10 | 69.6% 43.5% |
| 5. What type of device do you have that provides access to the internet at school? | Smartphone = 22 Laptop computer = 20 Desktop computer = 4 | 95.7% 87% 17% |
| 6. What type of portable device do you have available that provides access to Wi-Fi? Check as many as applicable | Android smartphone = 21 Windows laptop = 12 iPhone = 1 iPad = 1 Windows smartphone = 1 | 91.3% 52.2% 4.3% 4.3 % 4.3% |
| 7. How old is your device? If you marked more than one device in number 6 above, how old is the preferred device? | 2 years or newer = 17 3-5 years = 7 | 73.9% 30.4 |
| 8. Western Philippines University is considering allowing students and teachers to bring their personal portable devices to school. Students and teachers would be provided the ability to connect wirelessly to the school's network through PODNET (Personally Owned Device Network). If you were given this option, would you be interested in bringing your own device? | Yes = 22 No = 1 | 95.7% 4.3% |
| 9. In your classes, would the option to bring personal devices enhance classroom instruction and participation? | Yes = 20 No = 3 | 87% 13% |
| 10. How much time do you think you would use your | All day = 9 | 39.1% |

| | | |
|---|------------------------|-------|
| personal device in the classroom for internet | 4 hours = 5 | 21.7% |
| research, email, poll anywhere, and other | 2 hours = 4 | 17.4% |
| applications? | 1 hour = 2 | 8.7% |
| | I do not own any | 4.3% |
| | personal device = 1 | |
| 11. If you brought your own device, how often would you | 4-5 days per week = 16 | 69.6% |
| utilize this opportunity? (Check only one.) | 2-3 days per week = 5 | 21.7% |
| | 1 day per week = 2 | 8.7% |

In terms of internet access, stakeholders reported that they have access to the internet at school, with the majority of them using a VSAT internet connection. Furthermore, they connect via the university's or school's Wi-Fi. The majority of the stakeholders have a variety of devices to connect to the internet, with the majority of the gadgets being 2-3 years old.

Furthermore, as a supplement to the university's current internet connection, stakeholders have agreed to bring their gadgets to school for internet access and connectivity. They also agreed to bring their devices to class in order to have better connectivity and availability. However, the stakeholders are split on how long their devices should be used.

Internet Experience and Satisfaction of the Stakeholders

Table 3 summarizes the internet experiences of WPU stakeholders on topics such as internet service provider, connectivity, reliability, and speed. Its internet provider has been rated as very good (43.5%), and its connectivity has likewise been rated as very good (47.7 percent). On the other hand, its internet speed was acclaimed as excellent (43.5 percent). However, it is usually busy (39.1 percent).

Furthermore, the university's internet provider on various campuses was rated as good (34.8 percent) in terms of disconnection experience. On the other hand, its ease of installation was split to a very good (30.4%) and some said it is good (30.4%) by the stakeholders. Meanwhile, in terms of friendliness, the stakeholders at WPU consider it to be friendly (43.5%). Nevertheless, the professionalism of the staff of the internet provider was assessed to be professional (43.5%). In addition, with regards to their interest in solving the internet problems, the stakeholders reported that they are very interested (47.8%).

Table 3.

Internet Experience and Satisfaction of the Stakeholders

| Questions | Answers and Frequency | Percentage |
|---|-----------------------|------------|
| 1. Overall, how do you feel about your experience with HTech Corp. as your Internet service provider at school? | Very Good = 10 | 43.5% |
| | Good = 7 | 30.4% |
| | Excellent = 3 | 13% |
| | Fair = 3 | 8.7% |
| | Poor = 1 | 4.3% |
| 2. Rate the following aspects of your internet | Very Good = 11 | 47.8% |

| | | |
|---|--|--|
| connection from HTech Corp. | Good = 6 Excellent = 3 Fair = 3 Poor = 1 | 26.1% 13% |
| 3. Reliability | Very Good = 11 Good = 4 Excellent = 4 Fair = 3 Poor = 1 | 47.8% 17.4% 17.4% 13% 4.3% |
| 4. Speed | Very Good = 10 Good = 4 Excellent = 3 Fair = 5 Poor = 1 | 43.5% 17.4% 13% 21.7% 4.3% |
| 5. Busy Signal | Very Good = 6 Good = 9 Excellent = 3 Fair = 5 Poor = 0 | 26.1% 39.1% 13% 21.7% 0% |
| 6. Disconnect | Very Good = 4 Good = 8 Excellent = 3 Fair = 7 Poor = 1 | 17.4% 34.8% 13% 30.4% 4.3% |
| 7. How would you rate HTech Corp. software for ease of installation and use? | Very Good = 7 Good = 7 Excellent = 5 Fair = 3 Poor = 1 | 30.4% 30.4% 21.7% 13% 4.3% |
| 8. In speaking with your support representative, how would you rate the following aspects? as to Friendliness | Friendly = 10 Average = 7 As friendly as expected = 6 | 43.5% 30.4% 26.1% |
| 9. Professionalism | Professional = 10 As friendly as expected = 6 Professionalism = 5 Neither professional nor unprofessional = 2 | 43.5% 26.1% 21.7% 8.7% |
| 10. Interest in solving your problem | Very interested = 11 | 47.8% |

| | | |
|--|---|---------------------------------|
| | Interested = 7 As interested as I expected = 4 | 30.4% 17.4% |
| 11. When solving your problem, how would you rate the information provided? | Well-presented and understandable = 10 Sufficient to solve the problem = 9 Extremely well-presented and understandable = 4 | 43.5% 39.1% 17.4 |
| 12. If your answer to the previous question was no, why? | The problem was due to a network or server outage = 15 The problem was caused by a piece of software other than software = 6 Got transferred to someone who could fix my problem = 2 | 65.2% 26.1% 8.7% |
| 13. How would you rate HTech Corp. technical support as compared to that of other companies? | Better than other companies' technical support = 10 Much better than other companies 'technical support = 6 About the same quality as the other company = 4 Worse than the other company = 2 | 43.5% 26.1% 17.4% 8.7% |

In addition, the material that can be found on the internet has been evaluated and found to be coherently laid out and simple to comprehend (65.2 %). On the other hand, most responders believed that the issue was caused by a malfunction in either the network or the server (65.2 %). Most significantly, the stakeholders acknowledged that the technical assistance provided by their internet provider is superior to that offered by the other firms.

Discussion

The primary objective of this research is to ascertain the degree of contentment experienced by a variety of Western Philippines University stakeholders with relation to the institution's internet access and connection. This question was responded to by a variety of university stakeholders, and the answers have been circulated throughout

all campuses and offices. According to the findings of a survey conducted by several stakeholders at the institution, the internet access and connection were quite satisfactory in many respects. Online education is impossible without a connection to the internet, thus ensuring that students have access to the internet is essential. This flexibility, in comparison to traditional face-to-face instruction, has also been described in the relevant literature. In addition, the students develop the ability to study in a self-directed manner, which is an essential skill for fostering a culture of continuous education among health professionals.

Over the last decades, internet connectivity has improved tremendously and is available everywhere such as homes, offices, travels, and schools (Yebowaah, 2021). Today, empirical studies report that access to information can influence the academic performance of students. The use of credible internet resources is of greater importance for academic study, especially in high class courses which require an academic review of literature. Internet use for educational purpose is found to be the heart of adolescent academic achievement. The availability of internet is almost everywhere; most students have had access to internet on their cellphones (Asio et al., 2021). This helps students to broaden their academic information, research, and assignments by accessing information worldwide and enhances easy communication to the academic community. Therefore, the investigation on the impact of internet use on students learning outcomes is necessary for the implementation of internet use in learning.

The relationship of internet use and learning will provide an avenue to enhance learning environment and technology for problem solving in economics, society, and politics. Therefore, we ensure that this is the area of informatics. In addition, online learning is a versatile and efficient source of instruction and education because most respondents agreed that it facilitates distant learning by allowing for simple administration and accessibility, while also requiring less use of resources, less time, and a reliable internet connection. Students may quickly access the study material regardless of the amount of time they have available. This flexibility, in comparison to traditional face-to-face instruction, has also been described in the relevant literature. In addition, the students develop the ability to study in a self-directed manner, which is an essential skill for fostering a culture of continuous education among health professionals.

Conclusions

It is a potential to use the internet as a medium to provide education that is flexible, inventive, and oriented on the needs of the individual student. Because it is less expensive and more convenient for students to take their classes online, this mode of instruction is well suited for use in more remote and rural areas. E-learning, as a method of instruction, has several challenges that need to be conquered before it can gain widespread acceptance and use. The implementation of e-learning may be successful if a strategic plan is developed and if technology is seen as a positive step toward development and advancement.

Recommendations

The following suggestions are provided because of the results obtained from the study that was conducted: the supply of portable WiFi for students, particularly those studying in remote places that have an abundant data connection. With the support of the units of the local government, the provision of additional educational technology to those students who are both highly deserving and qualified (LGUs). The installation of WiFi hotspots in public areas, such as plazas, barangay halls, outposts of the barangay police, parks, and other public spaces, so that students in the community may use the internet for free. The supply of feasible services to provide aid and help to

students in the implementation of flexible learning utilizing online mode delivery. Specifically, this refers to the provision of possible services. Enhancement of the information technology infrastructure to provide flexible teaching and provide support for students' ongoing education. Furthermore, recalibration of program offers, and alignment of curricular skills based on the capabilities of students and the institution in the implementation of the online mode delivery of learning are two aspects that need to be addressed. Finally, the incorporation of adaptable teaching and learning practices into the long-term strategic plan of the organization as a potential future alternative delivery modality.

References

- Almahasees, Z., Mohsen, K., & Amin, M. (2021). Faculty's and students' perceptions of online learning during COVID-19. *Frontiers in Education*, 1-12.
- Asio, J. M., Gadia, E., Abarintos, E., & Paguio, D. (2021). Internet connection and learning device availability to college students: Basis for institutionalizing flexible learning in the new normal. *Studies in Humanities and Education*, 56-69.
- Casillano, F. (2019). Challenges of implementing an e-learning platform in an internet struggling province in the Philippines. *Indian Journal of Science and Technology*, 1-4.
- Cleofas, J. V., & Rocha, I. N. (2021). Demographic, gadget, and internet profiles as determinants of disease and consequence related COVID-19 anxiety among Filipino college students. *Education and Information Technologies*, 1-12.
- Cullinan, J., Flannery, D., & Harold, J. (2021). The disconnected: COVID-19 and disparities in access to quality broadband for higher education students. *International Journal of Educational Technology in Higher Education*, 1-12.
- Dahiya, S., & Rokanas, L. (2021). Lessons from internet use and performance during COVID-19. *Journal of Information Policy*, 202-221.
- Dhawan, S. (2020). Online Learning: A Panacea in the Time of COVID-19 Crisis. *Journal of Educational Technology*, 5-22.
- Elshami, W., & Taha, M. (2021). Satisfaction with online learning is the new normal: the perspective of students and faculty at medical and health sciences colleges. *Medical Education Online*, 1-12.
- Fabito, B. S., Trillanes, A. O., & Sarmiento, J. R. (2021). Barriers and challenges of computing students in an online learning environment: Insights from one private university in the Philippines. *International Journal of Computing Science Research*, 441-458.
- Gopal, R., Singh, V., & Aggarwal, A. (2021). Impact of online classes on the satisfaction and performance of students during the pandemic period of COVID 19. *Education and Information Technologies*, 1-14.
- Joaquin, J., Biana, H., & Dacela, M. (2020). The Philippine Higher Education Sector in the Time of COVID-19. *Frontiers in Education*, 1-12.
- Picciano, A. G. (2020). *Theories and framework for online education*. New York: Brill.
- Siripongdee, K., & Pingdee, P. (2020). Blended learning model with IoT-based technology: Effectively used when the COVID-19 pandemic? *Educational Gift for Young Scientists*, 905-917.
- Stec, M., Smith, C., & Jacox, E. (2020). Technology-enhanced teaching and learning: an exploration of faculty adaptation to iPad delivered curriculum. *Technology Knowledge Learning*, 651-665.



- Yebowaah, F. A. (2021). Internet use and its effect on senior high school students in Wa Municipality of Ghana. Library Philosophy and Practice, 1-12.
- Zainuddin, Z., & Halili, S. H. (2017). Flipped classroom research and trends from different fields of study. International Review of Research in Open and Distributed Learning, 1-28.