

Synchronous and Asynchronous Engagement in Virtual Library Services as Learning Support Systems from the Perspectives of Post-Graduate Students: A Case Study

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ABSTRACT

The global information economy is transforming the way people connect with each other, learn new things, and contribute to the knowledge society. With the online platform, library services have also expanded beyond face to face interaction. Although studies of virtual reference services have been made in different parts of the world, a case study discussing various forms of online reference engagement in Kazakhstan has not been written. While most of the theories on connectivism emphasize the context of instruction, the researchers of this paper discussed the tenets as they relate to online engagement. Applying the theory of connectivism, this paper explores through a mixed method the use of various online platforms to enhance engagement connecting library users to information. Findings revealed that differences in patterns of interactions as to platforms, types of queries, and users reveal that students, faculty, and other members of the academic community served by the library have various preferences for communication. The case study further showed that respondents have not maximized the use of VLS but interest in using both synchronous and asynchronous services is clear. Finding connections between sources of information, creating useful information patterns, is essential in learning. Amplifying awareness on the use of VLS giving emphasis to the unique features of each service is useful in order to enable students to see how this platform facilitates learning.

Keywords: virtual library services, mediated communication, connectivism, online engagement

Open Access

Accepted date: March 6, 2018
Received date: November 8, 2017

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1. INTRODUCTION

With the growing web presence, online engagement becomes essential in the knowledge society. This creates a participatory culture (Jenkins, 2009) where netizens have the opportunity to become knowledge creators and libraries play a significant role not just as knowledge curators but also as co-creators or facilitators of learning.

As the information ecosystem becomes more pervasive, information and technology become the essential tools for national development. In Kazakhstan, a government program dubbed “Information Kazakhstan - 2020” (Ministry of Information and Communication, 2016) was developed, preparing the educational sphere for transitions in the knowledge society. This government initiative amplifies the online presence of libraries in Kazakhstan.

The indispensable presence of online platforms along with the growing demand for reliable information has amplified the value of delivering online services in teaching and learning. Thus, Virtual Library Services (VLS) are becoming a reality and an active part of libraries’ evolution on the Internet (AlEnezi, 2012). Specifically, the various forms of mediated communication adopted in VLS have distinct features that can distinctively address the needs of students, scholars, and researchers. However, the dearth of published studies in CIS countries, specifically in Kazakhstan, on how online engagement supports academic endeavors of students prompts the researchers to initiate this case study.

VLS has been recognized as an important component in a hyper-connected society. The Nazarbayev University Library (NUL) is the only library in Kazakhstan which has the most virtual presence, which includes:

- Library portal
- Library page on university web page
- Online catalog
- Ask a librarian service
- Interlibrary loan service
- LibGuides
- Presence in social network

NUL had these programs for less than a year; hence, looking at its impact can provide insights to improve service. This study serves as a starting point for dis-

ussion as the researchers seek to explore the value of online communication in reference service in the complex learning process in a rapidly changing social digital world. While most of the theories on connectivism emphasize the context of instruction, the researchers attempt to discuss the tenets as they relate to online engagement. Furthermore, this study hopes to inspire libraries in Kazakhstan to enhance VLS seeing the value of diverse VLS platforms to support learning.

2. STATEMENT OF THE PROBLEM

This empirical study considers the effectiveness of synchronous and asynchronous engagement at Nazarbayev University Library. It attempts to analyze patterns of usage of VLS and probes into perceptions of post-graduate students in business and how this online service supports their information and research needs, that ultimately provides a perspective and discussion for enhances learning. Specifically, it aims to answer the following questions:

1. What are the current patterns of usage on various VLS platforms?
2. What do post-graduate students perceive to be useful among VLS platforms in order to find information and seek assistance for their research at Nazarbayev University Library?
3. What are users’ perceptions on the effectiveness of synchronous and asynchronous conversations in VLS provided by Nazarbayev University Library?
4. What are the areas that need to be improved in VLS in Nazarbayev University Library?
5. How can synchronous and asynchronous conversations in VLS be improved to enhance connectivity between students and librarians that will amplify instructional and research support for post-graduate students?

3. REVIEW OF RELATED LITERATURE

The pressing demand to have effective and fully functional VLS has been emphasized by the government within its thrust so that by the end of 2020 almost all educational organizations will have access to e-libraries (Kapezovich & Toktarbekovna, 2014). Aside

from teachers who act as facilitators, numerous media and social media interactions generate information and knowledge on the 21st century learning platform. Informatization as a concept in Kazakhstan has become a growing research topic in education (Mynbayeva & Anarbek, 2016) that recognizes the role of technology in learning. Knowledge is now obtained through interaction with the network community (Mynbayeva & Anarbek, 2016, p. 262). Various didactic paradigms describe the evolving practices but one concept that this study anchors upon is connectivism. Olle (2012, cited in Molnar & Szuts, 2014) posits that, “with the interconnection of the society and Web 2.0, a new type of education emerges -- the ‘connectivism’ which offers new ways of learning that was never seen before” (p. 107).

3.1. Virtual Library Services and the Theory of Connectivism

VLS works within the idea that “knowledge that resides in a database needs to be connected with the right people in the right context in order to be classified as learning” (Siemens, 2005). Although connectivism as a concept has an orientation towards the discussion of the new role of educators, it can be gleaned that it is strongly connected to VLS as interaction is a means to an end, which is teaching and learning support. Below is a paradigm that illustrates Siemens’ idea that

learning can reside outside of ourselves (within an organization or a database), is focused on connecting specialized information sets, and the connections that enable us to learn more are more important than our current state of knowing (Figure 1).

In his paper, Siemens expounds that Google Scholar, Scopus, and open access journals offer increased access to academic resources; an extension to more informal approaches such as regular Internet search and Wikipedia. Social software (blogs, wikis, social bookmarking, instant messaging, Skype, Ning) provide opportunities for learners to create, dialogue about, and disseminate information. Theoretically, VLS is a platform that involves all the above mentioned technologies and networks where new information is continually acquired.

By following the underlying principles advocated in contemporary learning theories, such as connectivism, librarians can work with teaching faculty to provide students with a collaborative learning experience that extends well beyond the library classroom. Connectivism has already been adopted in library instruction.

The case of Wichita University is one example applying connectivism in the library. Mallon (2013) shared her experience as an instruction coordinator exploring ways to heighten students’ learning experiences and promote hybrid instructional models that support students in blended learning environments. To amplify learning, libguides for specific courses were created.

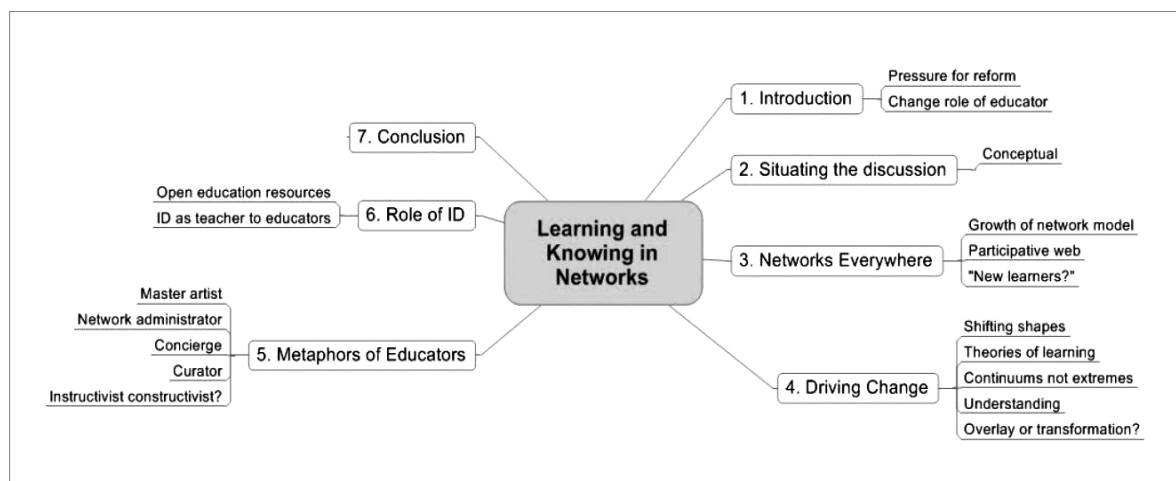


Fig. 1 Paradigm on learning and knowing networks by Siemens

Piazza, an educational learning site, was used to open more engagement with their classmates and instructor in a familiar environment. By designing library research instruction in conjunction with the guidelines of the connectivist learning theory the authors recommend that librarians can easily provide opportunities for students to collaborate with their peers and librarians at their own pace in social, digital environments where they already feel at ease.

Several case studies also point out uses of the theory of connectivism with library work. Highlighting the digital environment, moreover, this study ventures to see learning support of libraries beyond the context of instruction. The researchers in this study further advance that online engagement of librarians in various forms also applies the theory of connectivism as it can provide opportunities for students to collaborate with librarians.

3.2. Current Studies on VLS

Various studies around the globe have been conducted about VLS. Several researchers analyzed different aspects of VLS such as user perception of Virtual Library Services (Cummings, Cummings, & Frederiksen, 2007). Duncan and Gerrard (2011) studied about integrating virtual reference service in the academic library; while Montalvo (2016) looked into the importance of self-service among the users. Moreover, how the digital library supports research collaborations (Aghakhani, Lagzian, & Hazarika, 2013), the changing e-research environment (Zhao, 2009), and library availability within virtual space (Elliott & Proberts, 2011) were also some of the major aspects in VLS research.

While most of the studies in VLS are anchored on information needs (Susetyo-Salim & Septiana, 2018) or usability (Nicol & Crook, 2013; Mu, Dimitroff, Jordan, & Burclaff, 2011) this study analyzes the level of interactions in the library and how connections can facilitate learning.

Specifically, in terms of synchronous and asynchronous engagements, Lee (2004) made a comparative analysis of e-mail and chat reference services; while Lietzau and Mann (2009) discuss about real-time synchronous instructions with students in Taiwan where four different scenarios are presented, with assessment results gathered from surveys and debriefings. Scenarios range from use in an online-only class, to one-

shot sessions with faculty and students, supplementing week-long library instruction sessions, and one-on-one sessions. Individual instructions were concerned with making effective use of the librarian and student's time (Arvin & Kaiser, 2012). Studies on drop-in style synchronous online instruction (Steiner, 2011, cited in Arvin & Kaiser, 2012) and research describing the Internet Video Virtual Classroom by Quinn, Regan, and Schoech (2008) suggested potential strategies to deal with problems while waiting for technological improvements. Moreover, a study of Pearce, Collard, and Whatley (2010) on SMS transactions exhibited a positive result from users supporting the conclusion that users do not expect a purely synchronous service, although faster response times and thoroughness of answers do show a relationship with higher user satisfaction.

The researchers propound that, while information and technology lay the ground for new ideas and innovations, the presence of experts (information specialists) that can lead to the right information is still essential. Synchronous and asynchronous communication is not only important in the classroom. Information exchanges in the library are equally as important to enhance learning. A common scenario in libraries could be: 1) Librarians and faculty exchange emails on the materials to be used in classes; 2) Librarians prepare a list of resources that can be used by faculty and send them to the faculty; 3) Faculty call the library to inquire for available resources in the library; 4) Students chat or call the librarians when they cannot find information in real time; and 5) A researcher checks the policy of the library for possibilities of finding information through microforms. These are just a few of the situations where librarians and the learning community interact. It brings to the point that the library has existing online communications.

4. RESEARCH METHODOLOGY

This study adopts a mixed method of research integrating quantitative and qualitative methods of data collection and analysis to understand the research purpose (Creswell et. al, 2011). This study collected, analyzed, and interpreted quantitative and qualitative data in a single study to investigate the current situation.

The exploratory-quantitative-qualitative-inferential study employs an embedded design (ED). ED is a mixed methods design in which one data set provides a supportive, secondary role in a study based primarily on the other data type (Creswell, et al., 2003). The premises of this design are that a single data set is not sufficient, that different questions need to be answered, and that each type of question requires different types of data (Creswell et al., 2003, p. 67). With such, this study first looked into the current state of online engagement. Then, a case of specific groups of students were asked to delve deeper into the questions.

4.1. Data Gathering

The first phase analyzed the current patterns of usage of various VLS services. Using Springshare Reference Analytics modules of LibAnswers, the researchers culled data gathered since the adoption of the last VLS, which was April 2017. This application tracks the questions asked and answered at the library, regardless of user or librarian location. It integrates questions asked in the LibAnswers system with those asked at all service points, in all formats.

While other VLS have commenced earlier, to have a common chronological comparison the researchers set the period (April to December 2017) to be analyzed. While the analytics have more categories, the emphasis of the study focused on 1. Type of query, 2. User (where the query came from), and 3. From which school/office/ department the user is affiliated. Since the project has not reached one calendar year, the study did not delve deeper into inferential statistical data. As the main goal is to test the dynamics of conversation and prospective value of these conversations to support learning, the second phase, which is a case study, is explored to support or elaborate the primary quantitative data presented.

The second phase intended to have an in-depth examination of VLS. Using a Focus Group (FG) the researcher probed the utilization, effectiveness, and impact of virtual services as perceived by students in the Graduate School of Business. Moreover, a group interview is useful to support broad objectives of description. Qualitative interviewing may play a vital role in combination with other methods for conceptual development and the testing of concepts. For example, insights gained from qualitative interviewing may im-

prove the quality of survey design and interpretation (Gaskell, 2000).

The selection of respondents of the study considered the manageability of the participants in terms of number. GSB post-graduate students are also deemed appropriate to provide an objective assessment as they are considered active users of the library. GSB is the newest school established in Nazarbayev University and is where one of the researchers serves as Liaison Librarian. First-hand knowledge about the group was one of the considerations for selecting the group of respondents.

The FG interview utilized 10-item interview questions during the discussion. This exploratory assessment hopes to be expanded and adopted in the university and in Kazakhstan in the future as the demand for VLS grows.

As FGD is the selected method of gathering empirical data on the topic, a 10-item open-ended interview questionnaire was drafted by the researchers. To ensure that the contents are comprehensible and fit for the group of respondents, it went through a content validation process. Three content validators were requested to review the items: two professors from the department and one librarian who developed the VLS in Nazarbayev University.

25 post-graduate students from GSB were interviewed about their experience using VLS. The researchers requested participants to meet at a certain date for the interview. Each question was raised and everyone openly volunteered to share their thoughts. Clarifications and follow-up questions were also made. Responses were recorded and transcribed. Notes on relevant answers were transcribed and summarized according to the topics.

5. DATA ANALYSIS, FINDINGS, AND DISCUSSION

5.1. Nazarbayev University Library VLS

Nazarbayev University Library VLS, dubbed as Ask-a-Librarian service, was completed in April 2017. Online platforms include chat, phone, email, FAQ, and Make-an-Appointment via Skype. The software for instant messaging was updated to Springshare LibChat and incorporated through a widget to the page as well

as in the library main page, EDS, subject librarians pages, and in other pages. The email <reference@nu.edu.kz> service was redirected to the dashboard of LibAnswers software, and librarians are now required to answer the questions through this interface. This brings changes to librarians' workflow but also includes the questions submitted to the EDS interface. The change was necessary so that all questions from patrons come to one place. Buttons are included that link to subject librarians' profiles, a short guide for starting research, and information on how to call via telephone. This service is provided in both formats: online (via Skype) and face-to-face. A booking calendar and a list of seven subject librarians is available for reserving on the library portal. FAQ services were also updated with the Springshare software LibAnswers. A widget in the form of a search box and a tag cloud was incorporated in the Ask-A-Librarian page (Figure 2).

1. Patterns of Usage

Ask-a-Librarian services is a combination of face to face and online interaction provided by the reference department for reference assistance. As to the virtual presence or service with virtual components, the following services are available:

a. The **online chat** is an instant messaging platform for quick online reference to users. The chat service is available during the operating hours of reference librarians. Transcripts of the chat conversation can be downloaded or sent to the user's email upon request. This service is also made visible on almost all the parts of the library webpage to quickly assist users.

b. **Reference by phone** is another way for librarians to provide assistance to common problems and requests. Like chat service, telephone queries are attended to during operating hours by reference librarians. Information about how to contact the librarians is pro-

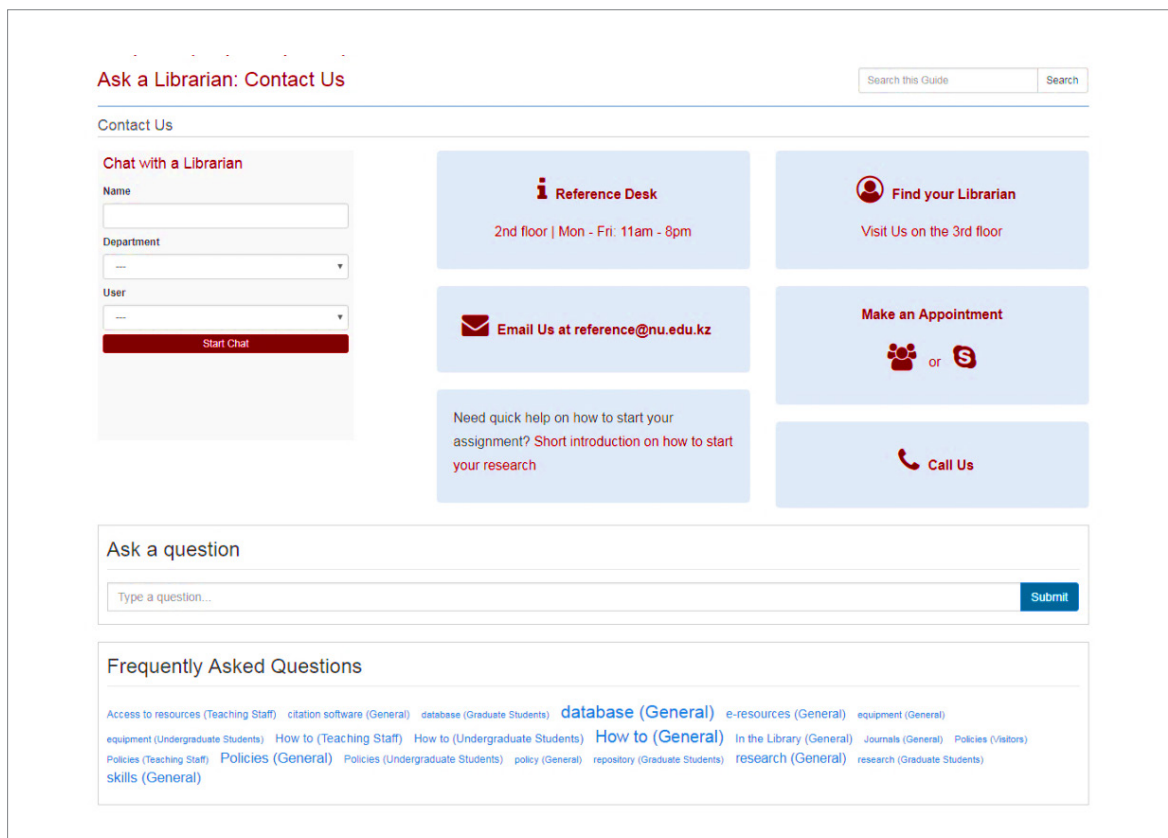


Fig. 2 Nazarbayev University Library Ask-a-Librarian service

vided in the Ask-a-Librarian page.

c. Aside from real-time communication, **email** is an alternative for face-to-face reference interaction in an online environment to encourage users to connect with librarians on a 24-hour basis. Users are encouraged to consult the Frequently Asked Questions for common inquiries or in case the chat service is offline. Questions are answered in no more than a working day's timespan.

d. The Ask-a-Librarian **Frequently Asked Questions (FAQ)** service also provides asynchronous reference assistance. Question forms which are answered during office hours or when a reference librarian is available are saved and assigned specific tags for users to check relevant queries when librarians are not online.

e. If the user's research question cannot be answered satisfactorily through chat, email, phone, or at the reference desk, the **Make an Appointment** service is offered. Make-an-appointment service is face-to-face or virtual (Skype-based) in depth research assistance and training. Users can make an appointment to any subject librarian who is deemed an expert in the field of research. If the query involves various disciplines, a team of subject librarians gather to discuss and assist the researcher.

An analysis of VLS platforms as to the topic/s frequently asked by specific users and from the department the user belongs is presented below

1a. Chat

Figure 3 presents the types of questions mostly answered by chat. Specific searches rank the highest with 90 (43%) questions answered in chat. Moreover, questions on library policy also are high (73 or 35%) is second and followed by questions on equipment/skills (30 or 14%). As to users (Figure 4), the majority of those who engage in chat are students who take up almost two-thirds of chats (144 or 68%). As to schools who actively interact through chat, the majority are not identified but the Center of Preparatory Studies (CPS) (34 or 16%), Graduate School of Education (GSE) (21 or 10%), and Graduate School of Business (19 or 9%) rank in the top three (Figure 5).

1b. Email

Figure 6 shows that most of the emails are transaction or engagement related to specific searches (1,041 or 76%) which deal mainly with interlibrary loan requests on particularly data, journals, or any information for research purposes. The main users are faculty (932 or 68%) and students (Figure 7). Data in Figure 8 reveal that most of the queries came from the School of Humanities and Social Sciences (SHSS) (219 or 16%), GSE (200 or 15%), and School of Science and Technology (SST) (159 or 12%).

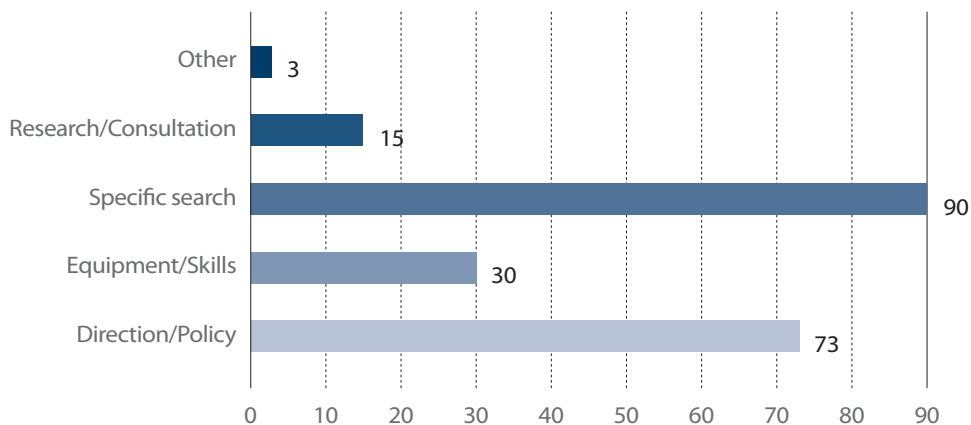


Fig. 3 Type of questions answered by chat

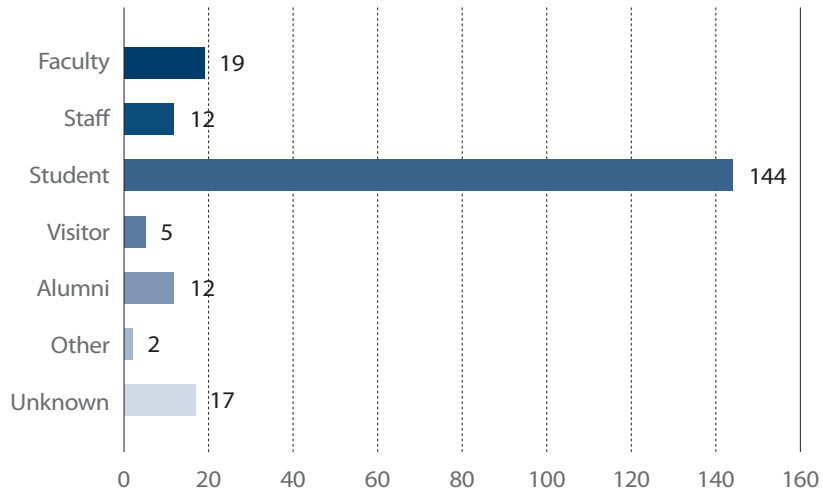


Fig. 4 User interaction by chat

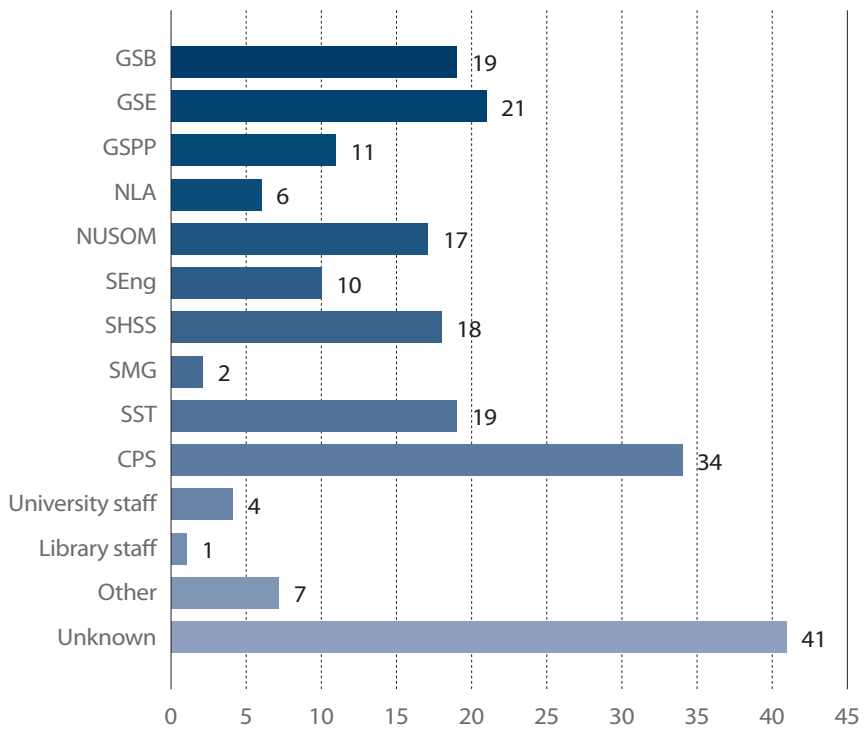


Fig. 5 Schools/department interaction by chat

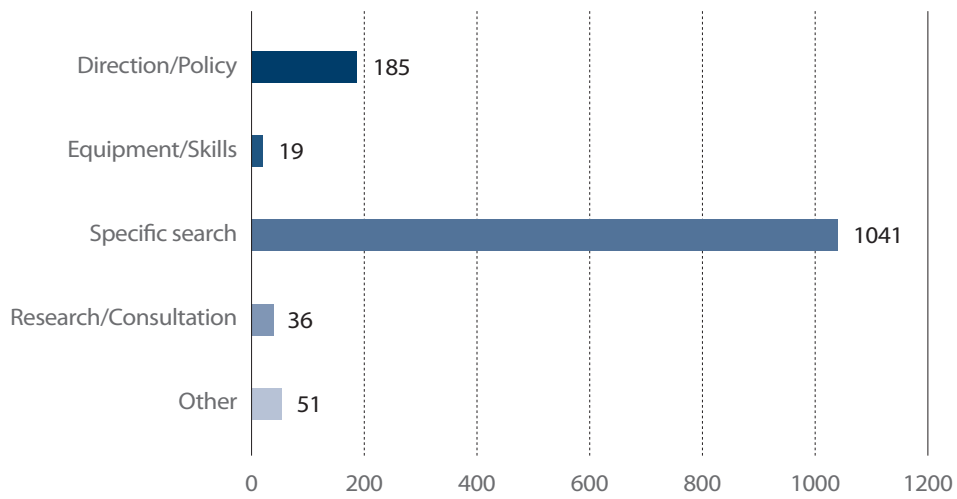


Fig. 6 Type of questions answered by email

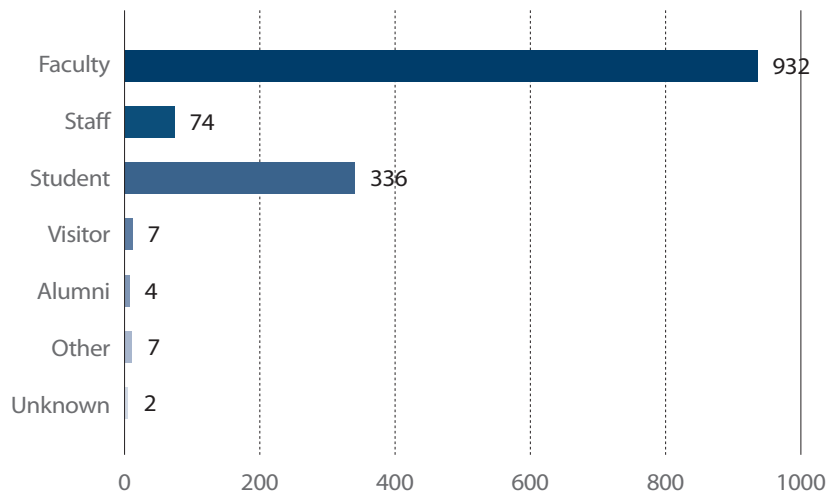


Fig. 7 User Interaction by email

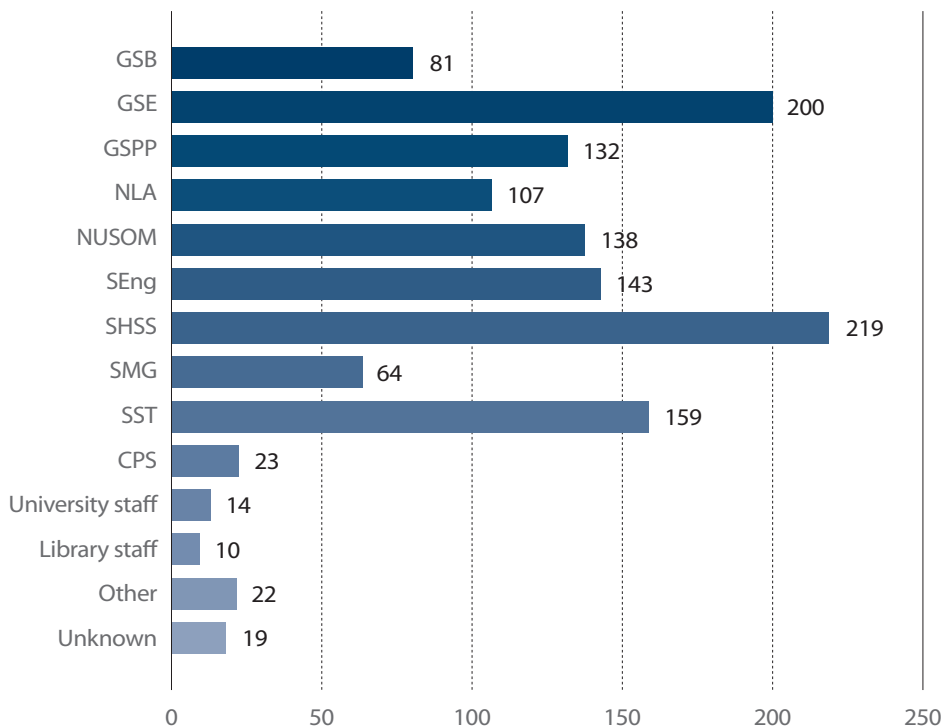


Fig. 8 Schools/department interaction by email

1c. Phone

Most of the queries by phone are about direction or policy (47 or 35%) and specific searches (45 or 33%) and research consultations (20 or 15%). While specific searches inquire about how to find a database, journal, and any information, research consultations are in-depth queries spanning from literature reviews to referencing/citation (Figure 9). Phone queries are mostly asked by staff, that had almost half of the telephone interactions (55 or 40%); faculty (48 or 35%), and students 10% (18 or 13%) also using the platform as shown in Figure 10. As to the schools or offices using phone queries, Figure 11 revealed that SST (27 or 20%), the library (23 or 17%), and SEng (17 or 13%) mainly use telephone inquiries. “Staff” includes those who work in the library, both professional and para-professional, as well as the staff from schools. University staff is designated to distinguish those from the Registrar, Human Resource, or University Service management

that do not fall into any of the school categories. It can be gleaned that staff from schools and the library use mostly telephones for inquiries that focus on directions or instructions and (library) policy-related types of questions. Internal phones are the most widely used communication as it comes real time and extension lines are provided for individual staff.

1d. Make-an-Appointment via Skype

Video appointments are not very popular at the moment as it is shown in the data (Figure 12) that there is only one specific search query made between 1 April to 31 December 2017. The query came from an alumnus (Figure 13) who graduated in CPS (Figure 14). While the data have shown that this platform is not used very well, implications can be drawn from the result as to the right platform, to whom the video platform can be useful in the future, and so on.

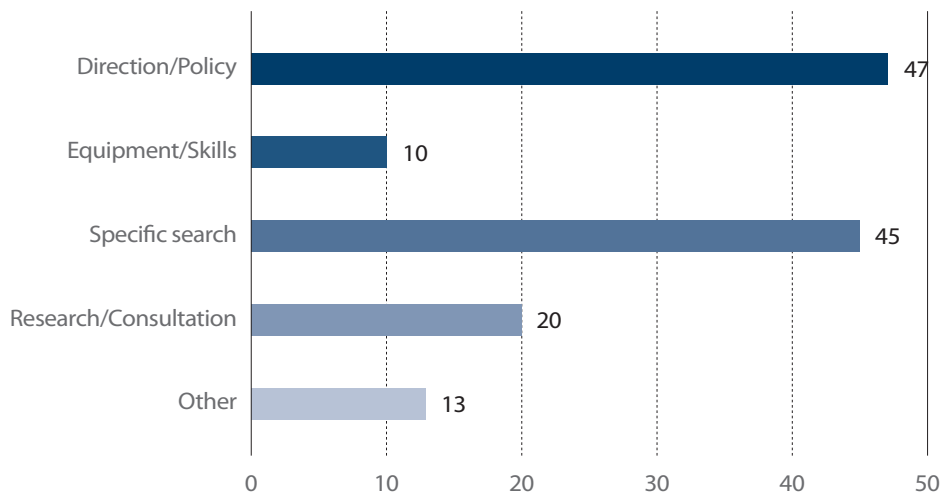


Fig. 9 Type of questions answered by phone

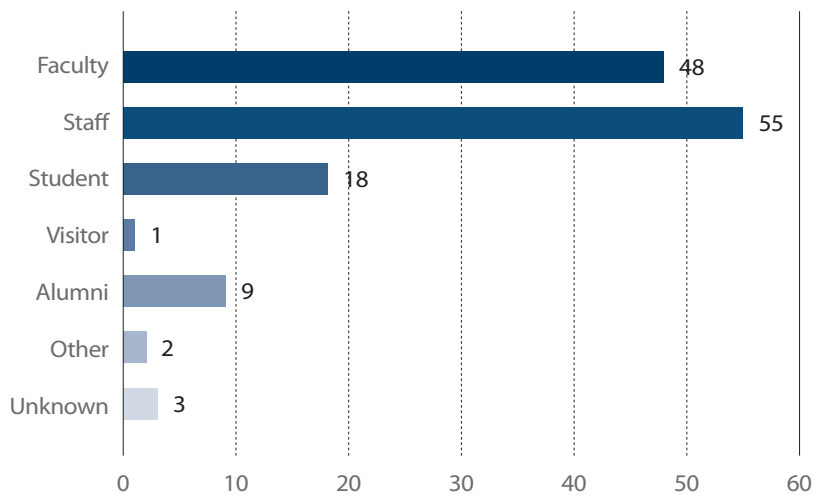


Fig. 10 User interaction by phone

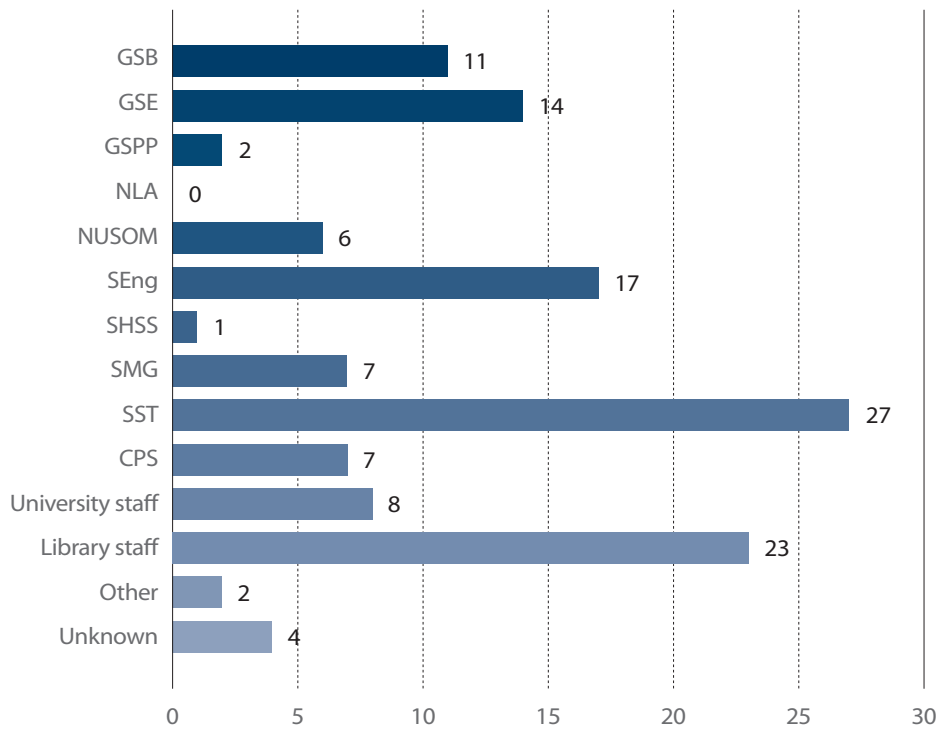


Fig. 11 Schools/department interaction by phone

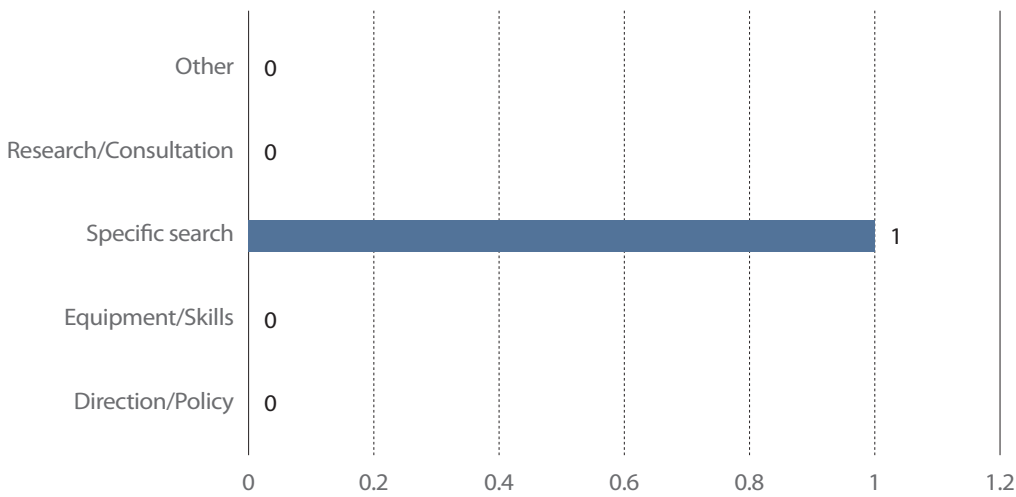


Fig. 12 Type of questions answered via Skype

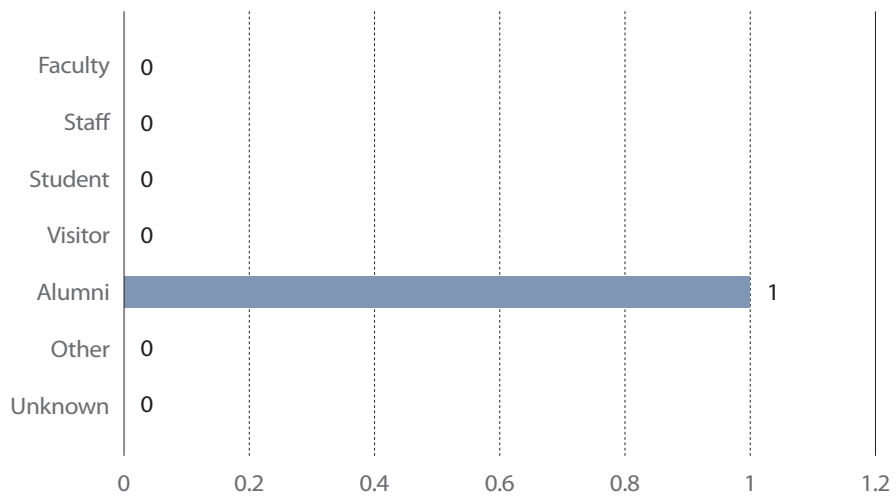


Fig. 13 User interaction via Skype

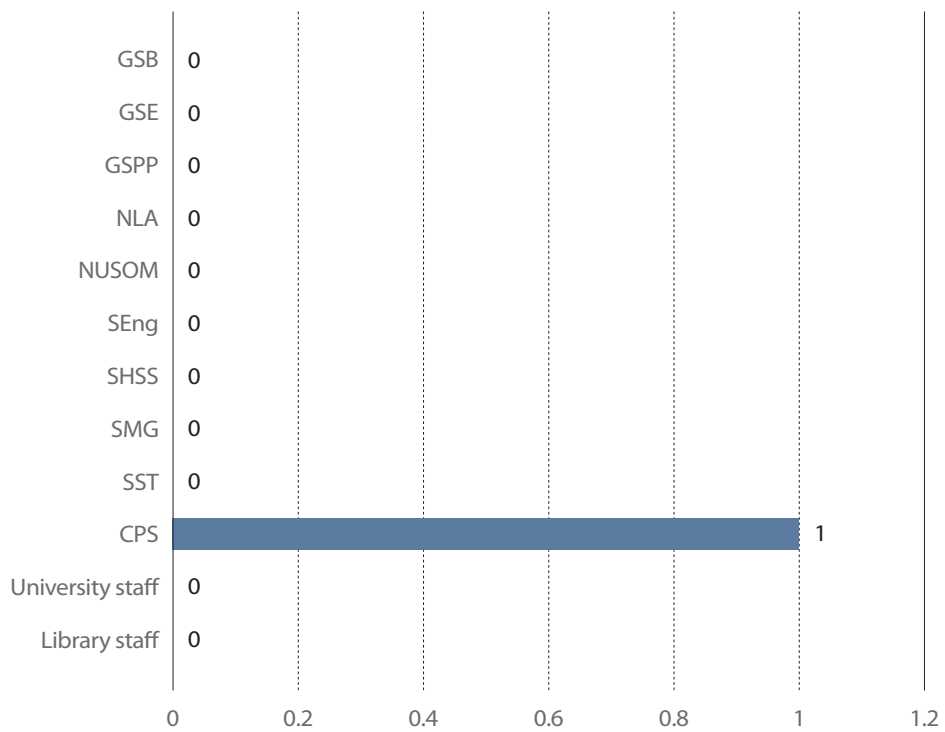


Fig. 14 Schools/department interaction via Skype

1e. FAQ

FAQ is a unique asynchronous platform. The only way to determine if it is used by NUL users is by views. Reference librarians enter the questions asked by users posting queries. The number of views show the extent of usage of common questions that were compiled and entered. Figure 15 shows a steady range of views. As a form of asynchronous reference, FAQ is only referred by users when chat or email is available. The nature of the platform where they also need to go to the library portal and find this information makes it less preferred.

2. Use, Perceived Importance, and Use of VLS platform

Out of the 7 virtual services provided, respondents

only use or mentioned 5 platforms for engagement, namely: phone, chat, Make-an Appointment service, email, and FAQ (Table 1 and 2). As shown in Table 1, almost half of the respondents experienced using the chat service and a number have engaged through Make-an-Appointment, email, and FAQ. As to utilization, Table 2 further reveals that overall, online conversation is not very popular for post-graduate students in the Graduate School of Business. For students, synchronous engagement (chat) is more popular. This pattern of behavior confirms the statistical data in Figure 4 where a majority of the users are students and Figure 5 where GSB showed active usage. Similar to the case study of Wichita State University, this case study hopes to expound the discussion how collaborative experiences can enhance learning.

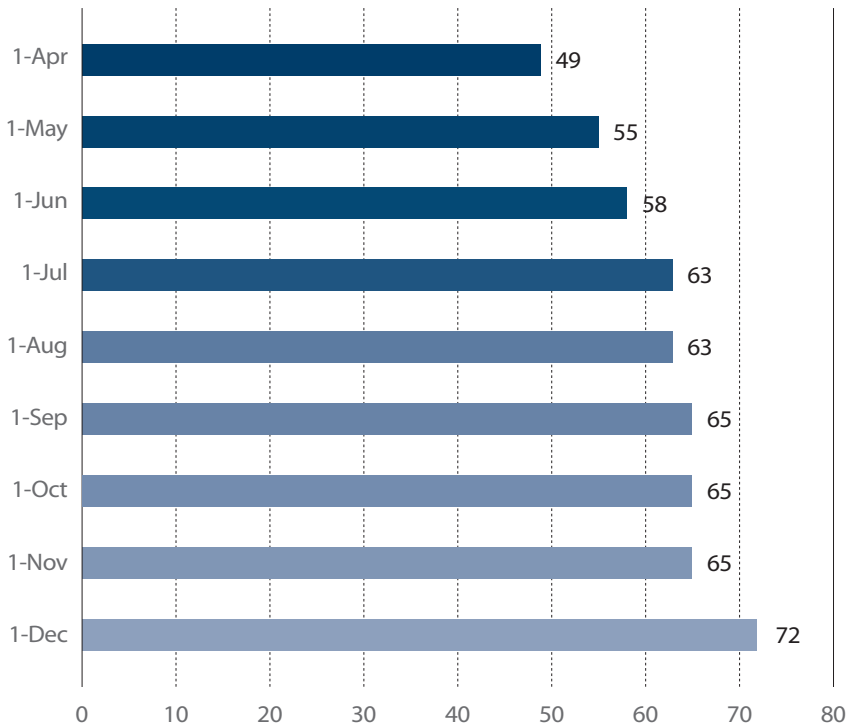


Fig. 15 FAQ views

Table 1. Use of Different VLS Platforms

Synchronous				
Responses	Yes	% (N=25)	No	% (N=25)
Phone	0	0	25	100
Chat	10	40	15	60
Make-an-Appointment	3	12	22	88
Asynchronous				
	Yes	%	No	%
Email	3	12	22	88
FAQ	4	16	21	84

Table 2. Perceived Importance of Synchronous and Asynchronous Conversation in VLS

Rank	VLS				
	Phone	Chat	Make-An-Appointment	Email	FAQ
1 st	2	8	7	6	2
2 nd	3	5	-	2	2
3 rd	2	3	3	5	1
4 th	5	-	5	1	1
5 th	2	-	1	1	4

3. Perceived Importance of Synchronous and Asynchronous Conversation in VLS

As a number of the respondents have not experienced using any of the online conversation platforms, the researchers inquired about how they view the services after presenting all the online engagement during the interview. Asking them to rank 1 as the most important and 5 as the least important, Table 1 shows that most of the respondents (n=8) deem that chat service is the most important followed by Make-An-Appoint-

ment: “I find chat easy and gives me the closest option to a face-to-face conversation.” Another added that “the chat box is already on the page where when we search on databases. This is better than sending a separate email or getting into the phone.” Another interviewee added, “I would want to make an appointment. I can clarify as [much] I want. I prefer seeing the person, too. It makes me understand more.”

Email (n=6) was also considered the top priority. However, some participants noted, “when we are searching in the middle of the night, what can we do?

No one will answer us immediately. We can forget.” This infers that they use email as an option for chat. A further comment was added, “[the] chat stops and I cannot connect again. So, I send an email.” Another noted, “when I email, you also call when you receive an email or you discuss in the classroom. So, this is good way to communicate.” Another valuable point mentioned is, “in email you give links and I have time to apply my knowledge in search [sic].” While immediate response is perceived valuable by respondents, they also deem that responses provided after a few hours can still be useful. Time is not considered by respondents to be a huge hindrance.

Those who preferred email see the value of this asynchronous conversation as answers are more detailed. Moreover, respondents trust that in working hours, the email responses are almost real-time. While NUL does not provide SMS services yet, the recent study of Pearce, Collard, and Whatley (2010) affirms that users do not expect a purely synchronous service. It can be gleaned that email is used as an option for some who cannot find a way to chat.

4. User Perception on the Effectiveness of Synchronous and Asynchronous Conversations

A. Ease of Use

Virtual communication has been widely used nowadays; hence, the researchers attempted to find out how most commonly used virtual communications are adopted by users. In an interview made by researchers, the 25 respondents were asked about how they perceive the ease of use of various library services offered. While a majority claim that they do not frequently use any of the online conversations to communicate with librarians or to be able to enhance their library services experience, almost 1/3 have started using email, chat, appointments, and other services, both asynchronous and synchronous, to interact or connect with the library.

Figure 16 shows users’ perception on ease of use of both synchronous and asynchronous connection. Eight respondents find email an easy way to get connected with librarians. They use this platform to ask questions about availability of books or resources, ask help for problems related to research and access, or to send request for materials. Responses transcribed mentioned a few instances:

- “You know I like to email you to ask if the book is available because if it is not, you offer to put it in ILL [InterLibrary-Loan].”
- “I like email because I have chance to explain. Chat is too short and there is waiting time when system is slow.”
- “Calls maybe the least easy to facilitate as there are chances that calls are missed and considering the availability of librarian to answer calls within office hours [sic].”

Chat and Make-an-Appointment are other platforms frequently used. Chat is either embedded in Libguides or at the main page of the library portal. This visibility of an online platform that can address queries in real time is encouraged for all students.

As to Make-an-Appointment, an online platform for real time via Skype is provided in order to enable students to avail of real time virtual discussion. This was developed to expand ways for real time: “We like to have appointment in person”; “I don’t have Skype in my phone and I need to learn it, maybe if there is no email or chat, I will use it. But I am not techy. I better see you in the library.” On being asked why they are not using the services, one respondent explained that “I believe that librarians might be busy with workshops and other events; so, it can be hard to make an appointment.”

Q&A for students is often used for in-depth research assistance. Specifically, as to impression of participants, one reacted that “it was very easy.” Another GSB student who has not experienced using this service noted that, “since I haven’t used these yet, according to the explanation which we had, it seems like the service is pretty much easy”; “If I see Q&A in the page, I check it. But there are other questions that are not relevant. I don’t want to tire myself looking for answers.”

Despite the unpopularity of online use, this is adopted by NUL to ensure that users are provided diverse ways for conversation. This confirms the study of Cummings, Cummings, and Frederiksen (2007) which noted that while many within the academic community are open to the idea of chat-based reference or using chat for some loosely defined “research purposes,” this openness does not necessarily result in high levels of use.

B. Satisfaction with Online Engagement

The value of user-friendly services, which provides

librarian assistance remotely, has been recognized by respondents. Those who have experienced it appreciate that librarians can be reached immediately for help and they get answers quick and short (Figure 17). Some of the respondents who have not used it confirmed that, “according to the presentation, it seems like all is involved into the service.” Another commented that both services are “well-constructed.” When participants were asked about areas for improving VLS in the university, those who were able to use it said that they are fully satisfied and the service is very good. For one respondent who has not experienced using any of the online platforms he commented that “I think it is ok now”; another said that, “I think for [based on] orientation it is perfect”; and another said “[I] Don’t know.”

When respondents were asked to give an example where the library had an impact on their work or research, one respondent mentioned a specific instance: “when I had a problem with finding a book and access to various journals, the online platform [chat] is useful.” Another noted that VLS is very helpful when he/she is studying for final exam and needs to search for a book, and asking a librarian for help saved time. For one respondent who has not used the service yet, he/

she noted, “for this moment, did not ask for help of library, but I will in writing paper.”

Both synchronous and asynchronous communication were found to have potential value for learning support.

5. Areas for Improvement of VLS

The last question posed was how synchronous and asynchronous conversations in VLS can be improved to enhance connectivity between students and librarians that will amplify instructional and research support for post-graduate students and help enhance connectivity in the knowledge society. One respondent broadly replied “very much.” It was further explained by another respondent that “it’s good to have a virtual library, because it’s becoming more convenient” and another explained that this is “access mobility.” A more specific response on informational retrieval mentioned that “some search options are useful for those who have some difficulties in the progress evaluation” and another said “good to search book or article without going to the library physically. Also can download materials directly [sic].” They think that reference assistance, especially on the technicalities of retrieval, can be ad-

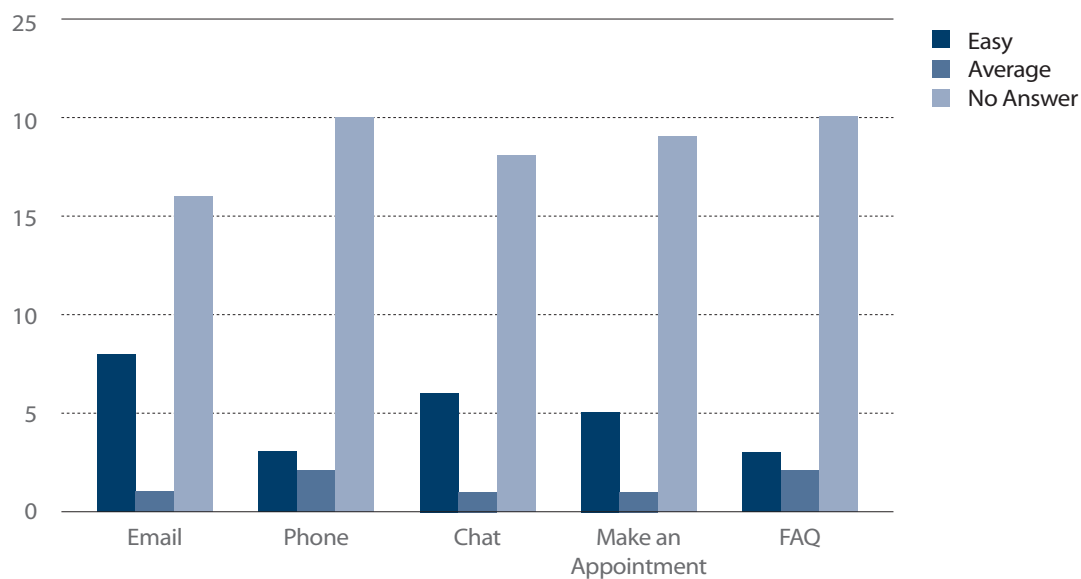


Fig. 16 Perception of GSB students on ease of use

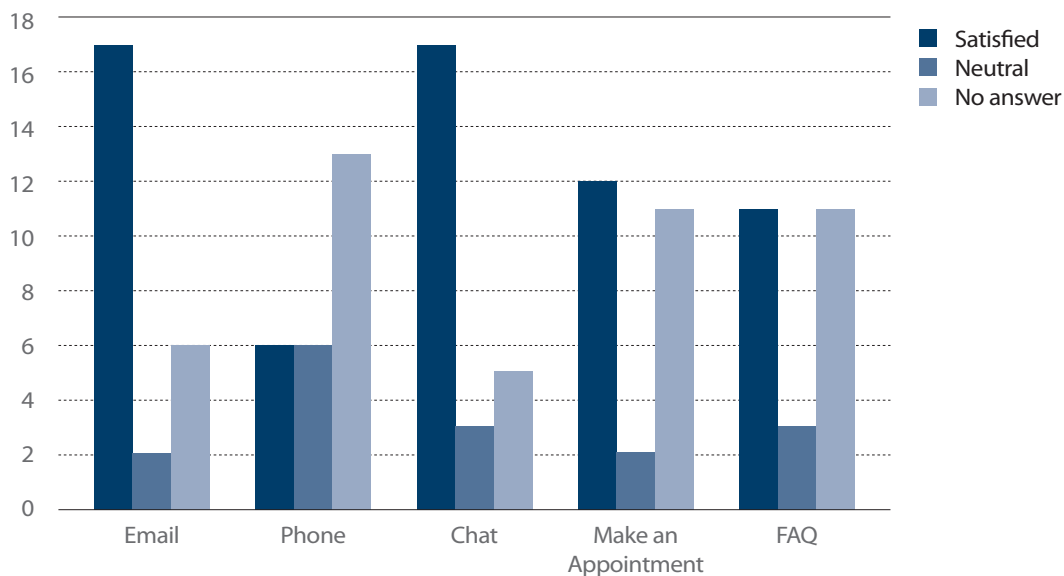


Fig. 17 Satisfaction of GSB students on effectiveness of online engagement

ressed by online conversations in different ways. It can be inferred that the value of VLS has been realized by the group.

One respondent recommended to “make FAQ section simplified, divide into sections by subject” and another suggested “may be use Skype/WhatsApp if urgent questions arise.”

It can be gleaned that respondents have suggestions to improve both synchronous and asynchronous service. For real time communication, a recommendation to try out the most commonly used tools such as Skype and WhatsApp was mentioned. Since there is an existing Skype service in Make-an-Appointment, WhatsApp will be taken into consideration. Chat is a quick way for them to get answers on directional queries. However, in-depth research may also vary. Library users usually see the need to use various VLS tools when they are already doing a thesis.

Prospects for Connectivity

Differences in patterns of interactions as to platforms, types of queries, and users reveal that students, faculty, and other members of the academic commu-

nity served by the library have various preferences for communication. While students use mostly chat, which is a form of synchronous communication, faculty members prefer email. Almost all the departments also use the VLS platform with GSE, SST, and SHSS being more active. The GSE is expected to have a higher usage as this is the first post-graduate school established in the university. The high number of users in SHSS can be attributed to the population of the school, and SST as a pure science research department produces high numbers of research output with experiments.

Post-graduate students in GSB have not maximized the use of VLS but prospects for utilizing the same for academic support are clearly stated in their responses. While there is very little user experience, the user participants think that VLS platforms, in general, are useful. Moreover, the respondents’ positive attitude towards exploring both synchronous and asynchronous conversations is also a good indicator of their openness to virtual platforms.

VLS is an essential tool in promoting knowledge creation and exchange in a hyper-connected society. As mentioned by respondents, it provides remote access

to users. Through technology, mediated communication is facilitated both in real time and otherwise, so that research assistance and learning support system is enhanced. However, this has not been realized by a majority of the researchers and scholars.

The capacity to form connections between sources of information, and thereby create useful information patterns, is required in learning (Siemens, 2004). This is where the library comes as a support system. The usage, positive perception, and interaction imply that both types of engagement in the VLS platform is a way to connect learners to useful information.

Future Directions: Engaging Through VLS

VLS should capitalize both on synchronous and asynchronous communication as the thrust of reference services is geared towards learning and research.

As suggested by the participants, use of WhatsApp in real time can also enhance communication. This platform is most commonly used besides Skype. Voice, accompanied by screen sharing, would seem to offer great promise in an educational setting, especially for remote users unable to interact with the library's reference and information literacy services in person (Lee, 2004).

The case study of a group of students may not represent the entire university but this group is a starting point to analyze the effectiveness of VLS. Ease of use is one area that is always looked into when adopting a technology-driven service and an on-going systems analysis will be very useful.

- SMS or text messaging should also be considered by Nazarbayev University Library as another option.
- Success stories of VLS users can be a good marketing strategy to promote the service.
- Promotion of VLS should be the priority of NUL in order to maximize the use of these services. Training on the use of VLS giving emphasis to the unique features of each service may also amplify the awareness level of the academic community.

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