HRMARS
Exploring Intellectual Capital

Adaptive Equipment Technology and Services for Supporting Disabled Users: A Case Study in the Central Library, University of Malaya

Nur Muni Edrina Abdul Munin and Halida Yu

Faculty of Information Management, Universiti Teknologi MARA, UiTM Selangor, Malaysia

ABSTRACT
This research is mainly concerned with the needs of the disabled user in a library with adaptive technology and services. This research could then help the library aware the needs of the disabled and to improve and implement the adaptive technology in the library especially in the Central library, University of Malaya. It is significant to explore the relationship between the implementation of the technology and services that suitable to be used in the library with the user or the disabled student in their performance. It is known that this group of disable students is facing double difficulties to retrieve the materials and services in a library due to their limitations. This study could enhance libraries to consider the proper needs of the disabled user's in the library. This study discusses regarding the technology and services which needed by the disabled user's in the library.A total of three respondents had been interviewed which include two disabled users and one librarian that manage the disabled user's in the Central Library, University Malaya. Results indicate the Central Library concern and providing the basic needs of the disabled user in the library. The disabled user also expressed their feelings and opinion on how the library could serve them more. The library was being said as the best Library in Malaysia in terms of providing sufficient services and facilities for their disabled users compared to the other local University library. The paper demonstrates one of the few attempts to examine the performance of the Central library, University Malaya in serving their disabled user and also the effects of the implements towards their daily task as a student. Specifically, we was also reconfirmed the efforts being made by the library itself in providing the most adequate and suitable facilities for their user even though there are few budget constrain to implement the certain services and facilities.
Keywords- Assistive Technology, Adaptive Services, Academic Library, Disabled user, Librarian, User Need, Higher Education, Academic Library, Special user.

1.0 INTRODUCTION
The library plays crucial roles in developing knowledge by providing materials and services to the users. There are different types of users coming to the library, some of which have less able people or much known as disable person. Library should always consider ways and efforts to be taken to avoid the user which is the disable to feel that their needs are not being considered in using the library. This research highlights on the special needs of the disabled users in the

445

library. Furthermore, the issue of the adapting equipment technology for the use of the disabled is not being discussed widely, as the research in this area is published and discussed approximately once in (5) five years. The library and librarian should brainstorm and find the latest technology that could be implemented to ease the disabled users. This research aims to look into the best services and technology that could be implemented in the library for disabled users. A disabled person also includes were also including the blind user, and physically disabled user. Each of the disabled users faces difficulty in pursuing their studies which include getting information and knowledge of the library, if the library is not considering the special needs of the disabled users. This research is relevant these days because the number of disabled users is continuously from time to time increasingly seen in using the library services and materials. This group of users already realizes how important the knowledge and the needs of them in pursuing their study for their future. The disabled users can mostly be found in an academic library. The academic library is crucial environment to serve the disabled users much more than other libraries most of the disabled users are from the academic library. This paper attempts to describe the results of the study which aims to investigate the perception of users towards the effectiveness of library marketing applied by the academic library and its relationship with user satisfaction. The objectives are:

1) To understand the services that are needed by the disabled user needs in using the library.
2) To find out whether the services and technology are sufficient for disabled users.
3) To find out ways that could be used by the Central Library, Univeristy Malaya in enhancing their services towards the disabled users.
4) To understand the barriers faced by Central Library, University of Malaya to provide services to the disabled users.

2.0 LITERATURE REVIEW
2.1 ASSISSTIVE TECHNOLOGIES

Assistive technologies are also known as the adaptive technology, it is an electronic solution which could help people with disability to live independently and could at least make them to do work easily. With the technology, it could help the blind persons can hear the computer-screen text, meanwhile for the people with visual impairments users, they can enlarge text on the screen, it could also enable the independent reading among the users. Besides the hardware, there is also computer software that could help persons with learning differences see and hear the information displayed on the screen. (ASCLA, 2010)

1. Assistive Technology Devices
   AT in Education (2008) state the definition of assistive technology devices are, the device means by piece of equipment, any item, or product system, whether acquired commercially off the shelf, modified, or customized, that being used in a way to increase, maintain, or also to improve the functional capabilities of a child with a disability.

446

2. Assistive Technology Services
   Assistive technology service was any services that being given directly to the disabled child basically in the selection, acquisition or also use of an assistive technology device.

2.2 SERVICES

Services could be defined as an intangible product, for example the accounting, banking, cleaning, education and so forth. The services are general and not specifies to certain subject or things.(IFLA, 2005)

1. Library services for disabilities

   In the context of library services, there are certain services that being provided in the library with purpose to ease the user. The services being provided are;

   a) The physical space
   b) Toilets
   c) Circulation desk
   d) Reference/information desk
   e) Children's department

2.3 USER NEEDS

It is becoming useless while you have complete resources, better services, and great staff but Anyira, I.E (2011) had defined the user need in the article of The Anatomy of Library Users in the 21st Century. Need are something that is subjective to be explained and exposed, as because different person has their own needs. In the context of library needs, the users are using the library to fulfill their needs and satisfactions.
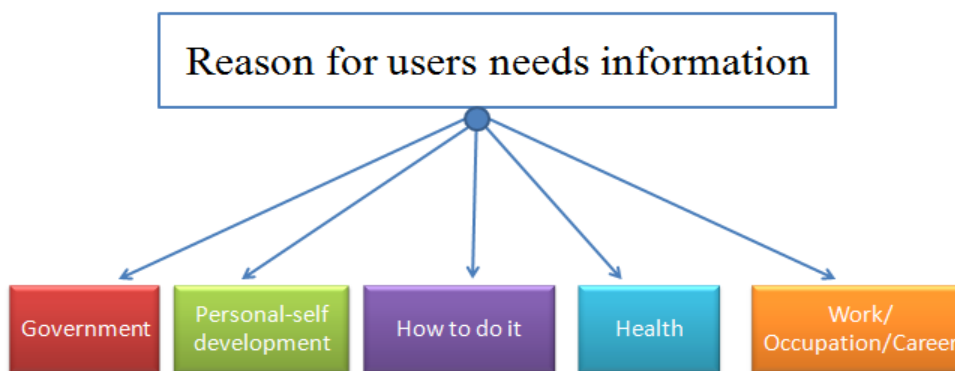

Figure 1. Reason for user needs of information.

1. Personal-self development: people need information to enrich themselves and remain relevant to their society, career, organization etc.

2. Health: library users need information on how to stay healthy and how to understand medical conditions they or their families have.

3. Government: people seek information to know what is going on in their government and in their country. They want to keep abreast with government policies and plans and know how it affects them.

4. How-to-do-it: people require knowledge or information in order to know what to do at any point in time. Every problem at hand, requires information as the solution.

5. Work/ occupation/ career: every professional requires up-to-date knowledge in his chosen profession, information relating to better jobs, etc. Students (whose occupation is schooling) needs information to do assignments, pass their exams, and write projects.

2.4 DISABLED/ DISABLED USER

The disabilities can be defined as a physical or the mental condition which prohibits an individual using their body, it is whether in ease partially or completely in performing daily tasks (Todaro, A.J., 2005). Disabled or disable person was mean by a person with an impairment who experiencing disability. Disability was a negative result of interactions that take place between a person's social environment and also his or her impairment.

i. The visual impairment

In easy word to be explained, the visual impairment was a term that being used in describing the vision loss of someone, or whether he or she could not see at all or also known as someone who was partially vision loss. There are some cases which they are completely blind, but there is also that called as legal blindness (Teens Health, 2016).

ii. Hearing impairment

Hearing impairment is described as a hearing loss that prevents the person from receiving any sound through the ear. There are different stages in the barriers, some can still detect sound, and some are completely lost hearing whereby this person will need to use a hearing aid in a way to amplify sounds (Kyada, n.d).

iii. Physical impairment

Physical capacity to coordinate actions, to move, or to perform physical activities is significantly delayed, impaired or limited and is exhibited by difficulties in one or more of the areas such as the physical and motor tasks, independent movement; performing basic life functions (Mass.Gov, 2006).

2.5 PREVOUS STUDY

Based on the previous study regarding the field of study, the previous researchers used a many approach in evaluating the advantage and disadvantages of the needs in adapting the assistive devices or the adaptive technology in the library to be used especially by the disabilities and disabled users. The study was then being grouped in two categories whereby the user-centered and provider-centered (librarian/library).
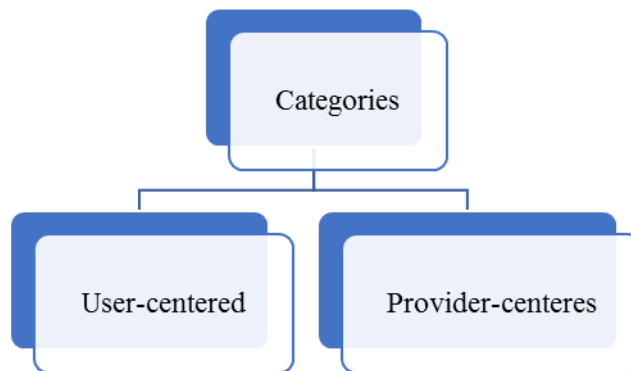
Figure 1. Categories of study

The previous study had shown that it had done with an aim to evaluate the prevalence of an accessible contains in the library resources, its either statewide or the country wide in a certain system.

i.   User-centered

The user-centered studies are using the qualitative method as because this user-centered are preferable to be used in getting a deeper and comprehensive answer. By using the quantitative method, the interview session will be held in a way to get the user personal opinion regarding the issues arises in the study. Rating of the certain services, hardware, databases or software against the pre-determined accessibility standards, this approach had been used by Durrance and Tatomir (2010), Cassner, Maxey-Harris Anaya (2011), Hill (2011), and Craven (2003).

ii.   Provider-centered

In the context of the library / provider- centered, a different approach is taken in terms of representing population and sample size of the study. The study shows varying levels of the assistive technology that implemented in the libraries. The same studies that considered most effective had been done in the citywide or the statewide level. The Ontario public libraries(Hill's, 2011) and Khailova's (2005) study that held in a public library in South Carolina, had been demonstrated thorough methodology for measuring library accessibility

3.0 METHODOLOGY

Research Instruments are meant by the measurement tools being used to aim to obtain data and results from the research subjects study in example the interviews. The interview instrument is suitable to be used as because it is an effective mechanism, effective in obtaining data and it can also easily being used in getting the concise and in depth of understanding and measuring the end result. This will facilitate better analysis of data and understanding on the research finding. In addition the interview also will be provided with easy language to make the respondent to get a better understanding in answering and giving their opinion and answer towards the questions being asked. The interview is designed to answer the research objective and research questions as well to examine the relationship between the variables. Qualitative is time consuming in the collecting data, hence the value of the information and data collected is way more expensive and worth. The interview questions are derived from the research

449

question and the research objective.Basically, this will become a semi-structured interview. The question will be asked and the respondent will just share his or her opinion regarding the topic that arises. There is no limit in expressing their answers. The question being prepared is basically to guide the researcher to assure that the question and research to go smoothly.

4.0 RESULTS AND DISCUSSIONS

University Malaya was known as the pioneer in serving their disabled user with a basic needs of the technology and also services. This is also stated by the participants whereby the Central Library, University Malaya, was the only library that really provides the basic needs that required by the disabled user compared to other library in Malaysia. The facilities and technology that being provided are including the lift with Braille, the computer in Lab S that are specially provided for the disabled users, the Braille printer, Jaws software, Braille books (certain subject), carrel rooms and some other facilities. Meanwhile the services being provided are the volunteer reader (from other student that volunteer that volunteered to read certain books and help the disabled user to complete their task), the staff will also help to locate materials that are needed by the disabled users and some other services being provided in the Central Library.

The research findings are being done by interviewing one (1) librarian and also two (2) disabled users (blind). The interview session is being done in a single day, which per person had been interviewed for about 45 minutes to one hour and the interview being done in a closed space whereby the interviewer and also the respondent could give the idea freely and they feel much comfortable with the closed space interviewing.This findings section will be separated into two whereby the first is respondents which the disabled user and the second section are the librarian. The first respondent being stated in this finding section as Siti, meanwhile the second respondent being addressed as Jamal.

4.1 Disabled User

There are two respondents take part in the interviewed session. The first respondent being addressed as Siti meanwhile the second respondent addressed as Jamal. The first respondents had been using the library services and technology for about 5 years, which is started in her undergraduate study in University Malaya. She is a student of Anthropology and sociology, in the Faculty of Arts and Social Science. On average she used library facilities and services 10 (ten) times per month. Second respondent had been using the library in the same range of time as the first respondent which is almost five years that including the undergraduate study. The second respondent was also studying in Anthropology and Sociology, at Faculty of Arts and Social Science. Both of the respondents were postgraduate students in University Malaya.

The questions are related to the topics being discussed and it is also merged with the previous study, whereby there are few studies that being found could help this research. The question asked are mostly related with the services and technology that provided in the library, the level of satisfaction of the disabled user, the opinion and suggestion and also the barriers that came across of the library in implementing the services and also technology in the library. The findings will then show the total final results based on the questions asked to the

respondent, the answers will show how the library had been served to the respondent which needs a special care and attention.

The services are one of the important elements in giving satisfaction to the users in the library. The disabled are special users that need an extra attention and care from the library. There are a few questions that could be related to the issues of assessment services. The first related questions are regarding on how they think of the performances in the terms of the services and technology as being provided by the library, the technology was also one of the main topics that are important in this new era. Siti giving out an answer which she thinks that the total performance is enough, but need to be improved for the other types of the disabled users for example the deaf and also the physical disabled. As for the blind types of disabilities, the improvements are still needed, but the basic requirements are enough, yet the maintenance needs to be done frequently.Jamal in the other hands gives a very good statement based on his opinion;

"In comparison with other Universiti and library in Malaysia, Central Library, University Malaya is giving out the best services and also technology to the disabled users. It is undeniable that the basic need are being fully served, however, the library must also discover what more they could provide, in example, they can try to explore from outside country in what is the suitable technology or services that could be implemented and bring back to Malaysia".

His opinion regarding the performance of the services and technology of the Central Library, University Malaya as sufficient and fulfill the basic requirements for the disabled users. The performances are considered enough for the basic services and technology, but it is said that it need to be improved. The technology and services such as the carrel room and Computer lab S which provides the screen reader and computer and also the lift with Braille being provided for the disabled users. The user was also said that the library needs to keep the maintenance up to date. Both of the opinions are basically saying that the performance is good and fulfill the needs of the disabled user.

The status of the library could also be found or calculated based on their concern about the needs of the disabled user's. Concern is one of the keywords that could help the both parties to get the full satisfaction in serving and receiving. This research will be used to figure out does the library concern about the needs. The second question is does they (the respondents) think that the library concern about their actual needs. Siti in the interview said that the services and technology are sufficient for the respondent as she think that the librarian are always helping in the retrieving of the book and also in the times where she needs a help from them. In comparison, University Malaya Central Library does fulfill their needs and gave the best basic needs compared to the other's library in Malaysia. Meanwhile Jamal spelled out that in term of concern, the user stated that the library does concern about the need of the disabled user in terms of the technology and also services. The status of the library is based on how the user's think the library fulfill their needs and how concern are the libraries towards them

This research also studied about how frequent the library asks the disabled user regarding their opinion on how to improve the library services and technology. This is

451

important as because the respondents might have their own services and technology that they knew from other places that could be used and implemented in the library in a way to improve the library performance and to fulfill the disabled user's need.The first respondent said that the librarian as well as the staff always comes when the special department under University Malaya that are focusing to care and organized the disabled students in University Malaya. Which is known as Management Unit Students with disabilities held a meeting with the disabled users, the library will also sometimes send a representative to carry out a survey to ask them how well the library had served them and what should be taken as consideration to improve more, and that is when the library improves a lot in term of services and technology as they get the concrete and concise answer from the disabled users. The second respondent responds that the librarian always meets the disabled user in their carrel room to ask their opinion and suggestion regarding the technology and services that could be improved in a way to fulfill their needs. In short, the librarian in the University Malaya Central Library does consider about their needs. Both of the respondents giving out responds that showing the library are considering their needs and will keep asking them to get opinions on how to improve more.

The basic needs of information and knowledge regarding the skills to locate materials in library, to explore the library are important to be introduced to the students. The new students especially have certain difficulties in using the OPAC, to locate books or materials and some other services in the library. The disabled user must also be given specific classes that could teach them on how to make use of all the materials and services in the library in full mode. The research also investigated whether the library does provide any classes that being used to teach the user's which include the disabled to make them easier in using the services and facilities provided. Siti responds that during the undergraduate and master's, they can request to have one class to learn how to find material in the library. It is compulsory for the undergraduate to attend the seminar or classes, but for the post-graduate, they can request for the class. In the University Malaya itself, there are other parties and society that involves in teaching the disabled user in using the services in the universities. Meanwhile Jamalalso explained the same things as the library provides classes that are compulsory for the undergraduate student, as for the postgraduate student, they can request to have one class. The other classes are being prepared by other parties that are mainly attached to the disabled students in University Malaya.Both respondent giving out the same answer as because both of them are having the same opinion and the library does provide the classes for them to get better knowledge on how to use the services and technology in the Central Library, University Malaya.

The participants were also being asked regarding the scales that they could rate regarding the services and technology being provided in the Central Library, University Malaya. The scales are often used in studies which relates to the natural resources management, in example, to measure the citizen preferences for recreation activities. This research is using the scale of 1 -10, based on their preference and opinion, scale 1 is highly satisfying, 5 is moderate and 10 not satisfied. This rating shows similarities in both of the respondents use both of them give out the same answer for both of the survey (technology and services). In terms of services, the basic needs had been provided by the library in a way to fulfill the needs of the disabled

users. The basic services are being stated as complete and they feel enough and satisfied in using the services in the library. The technology nowadays is fast in revolution. The technologies are being rated as 7 out of 10. This is because of the basic technology had been provided for the disabled user. The users suggest that the technology must be maintained and regular maintenance must be done and the user suggested that the library should always update the technology based on the latest technology and era nowadays. The technology must also be updated with the times. The scale being rate is 7 for the services as because the basic needs are being fulfill and successfully provided, but again, the respondent was also highlighted that the maintenance need to be done frequently in a way to ensure that the library will be aware of what need to be improved for the disabled user needs and satisfaction.

In short, both the technology and services are satisfying the disabled user, but both of it must be updated frequently and must follow the new era of technology. The disable users are kind of a special user's that needed the technology to make them get many benefits in using the technology.

Suggestions from respondents: The last interview question being asked is regarding their opinion that they could suggest to the library on how library could improve to ensure the disabled user to get the full satisfaction.Opinion is one of the important factors that could help the library to get knowledge and idea on what they should improve and upgrade in term to satisfy the users. The city stated that staffs at the counter must be put available at all time to treat and provide services such as to find the book for the disabled user. The respondent was also suggested that the library should consider the needs of the partially blind user, the big font book and the call number must be provided to ease them in located and find the materials needed. The partially blind user does not require lots of help from others, but as long as they can clearly see certain things they need, it will be easier for them to complete their task. Jamal responds based on the question that's being asked which he's given two suggestions, the first one are regarding the staff; more staff should be placed at the counter, so that they can help the disabled user to find the material they need. The second recommendations are the big font at the book and the call number should be placed in the book, so that the partially blind user could find the books or materials they want easily. Both of the respondents are having the same thought about what should be improvise in the library. They had also stated that the basic need had been prepared for them.

4.2 Librarian officer

The interviews being done with librarian that are specialized in handling the disabled user. The librarian takes care of the disabled needs and will try to upgrade their technology and services based with the new technology that arise and the services that could help the disabled user in handling their task in the library.

The first question is the challenges for the library in implementing certain specific services and also technology for the disabled user. The challenges that are mainly lingering with the issues in implementing the specific services and also technology disabled user's are the budget.

Budget

The budget (1) considers the highest challenges as because, the library needs a huge amount of budget to implement the technology that are specialized for the disabled users. As we know, the technologies are now one of the main things that could drive the institution including libraries. The cost is usually started in the range of RM10,000.00 and above, as the technology that will usually come with the software are not originating from Malaysia, it is mostly being purchased from overseas. As there are not only one type of disabled user in the library, it will be much more costly to implement all the needs of the disable's user.

Volunteer Reader

The next challenges are the challenges in finding and to get the volunteer reader (2). The voluntarily act as the reader to the disabled user that needs them to read certain books or anything that could help them in finishing their assignment or task. Other than that, this volunteer reader will also help them type their assignment, whereby the disabled user will talk and the volunteer will type as what they heard. The volunteer are not easy to get at because the volunteer was also a student, and they will come to help if they have some free time, but usually, the volunteer will interact directly with the disable user. This will make the issues to arise and became challenges.

The next issues are regarding the possible factor that takes to be considered in implementing the services and also technology in the library. The consideration will be done by times. In the example, the ramp walkway is being considered to be improved. The consideration will also take place once the discussion being done between the librarians, as the cost for implementing certain services and also technology are using huge amount. The consideration of implementing it will also include the budget rather than only the consideration to fulfill the needs. The library really concerns on the needs, but they must also cope with the limited budget that they have. Usually, the library will list down all the needs that being stated by the user and they will figure out which one is the most needed and important to be adapted in the library. Then they will hold meetings to decide the services or technology that needs to be implemented. If there is enough budget to implement the certain technology, they will implement it in the scope of time. But if there is no budget in a meantime, the library will list the need as an important and the front list that will be implemented once the budget are enough and fulfill the cost of implementing it, as the technology are not cheap, the library must take precautions in every decision they will do because there are many other things that need money in the library such as the materials in the library.

Costs

Budgets are critical issues to be discussed not only in the library field, but in any other organizations. The next questions are regarding the overall cost that library estimated and paid. The specific cost is not being mentioned, but the latest technology that's being implemented cost RM20,000.00 which is the Braille printer. The cost is quite expensive in providing and purchasing certain technology and services to the user as it is specialized to the disabled user. There is no specific and concrete amount of the total cost being shared as it might be the

policy, but as being explained, the cost to implement certain technology is a huge amount as because the technology are mostly being purchased outside of Malaysia. The maintenance cost of upgrading the software or the machine itself was also cost a certain amount. Every library has its own budget of the finance. The central library will need to really observe the needs of certain technology and services before they bought it due to cost constrain.

Special services

Special services are that being used to differentiate the services between the disabled and non disabled. The disabled user surely needs an extra special service and attention as they required specific services. The special services that had been provided are including the Accessible toilet, which is specialized for the disabled as because the disabled user will need a bigger and much comfortable toilet for their usage compared to the normal users. The library had renovated the previous toilet to be used comfortably for the disable users. The next special services are the Information Skill classes that are being held for the disable user (blind) users. This class teaches the user's on how to retrieve certain documents, what is the needs of them in search certain topics, the class will also teach the disabled about the certain subject of the available books and material in the Central library, University Malaya. The next special services are the volunteer reader, in this case, the library was only become the platform of how the disabled user could get the volunteer reader for them in a way to get someone to read certain books for them, or the volunteer could also help them in typing the assignment. The library responsibility in this section is to provide form and to become the center person to let the disable to contact the volunteer or vice versa with them. The disable user will also get services from the librarian or the staff at the library counters to find certain books or the document for their reading or usage. The disable user will need to bring the title and the author's name of the material being looking for. In terms of the lift, they provide lift with the Braille codes to ease the disabled user to heading to the level they prefer to go.

Technology

Technology is an important aspect that could be measured in a way to know whether the library had implemented the right and the latest technology. The technology that had been implemented is as being explained earlier, which the Braille printing machine that had been implemented in about 2 months. The technology does give a huge impact for the disable as they could use it to print any document they want into Braille coding, by that, it could help them more in reading the materials. The database was also being provided for the disabled user whereby the world are being shown are bigger, this will then can make the partially blind user to get read the words at the screen. Other than that, the library was also provided the computer labs which being installed with the JAWS software that are well known to ease the disable user, in using the computer and to make the understand the content they need to know by hearing it with the usage of the software being attached in the computer. The library had bought books in Braille, for a mean time; there are 5 books of certain subjects. The books will be added up by times in a way to cater the needs of the disabled user. Basically, the Braille book being bought is based on the disabled user field of study. Technology is always one of the

things that will be considered in the library. There are certain other technology that will be bought and implement in future.

Future Planning

Future planning is an important aspects of an organization which it will lead they're organization into path that they targeted. The future planning must also consider the needs of user's and also to adapt to the current situation of the library and also the environment. There are few future planning that being planned to be implemented, as for the deaf user, the library planned to provide the flashlight sign to help the disabled user to alert them if there are any emergency cases happen in the library, as because they might not hear the call or emergency siren sound, the flashlight will help them to know any emergency alert. The next future planning are the services at the counter, it is planned that they wanted to provide and make the staff or librarian to always available at the counter for the disabled user as because, the volunteer student that had register might also have their own schedule as student, by implementing the counter service specialize for the disabled user, it could help them in improving their performance in studies and also understanding. SDU facilities.

Evaluate the needs of the disabled users

The evaluation aspect is also an important to be done in a way to get the idea on what needed to be improved and upgraded. Based on the question that's being asked to the librarian whether they distribute the questionnaire and done the evaluation based on the result received. The library had done surveys and also feedback evaluation towards the user by using the questionnaire to measure the needs and requirement of the users in the library. The questionnaire being distributed at least once in a semester. The results will then be evaluated and the librarian will hold meetings and discussion to make them self aware of what should be improved and what should they do to increase the satisfaction of the user's. The opinions of the student can also be given to them personally if the disabled users have any suggestion on how the library can implement in the library. It is meant by the suggestion could also be done informally; there is no boundary for them to give out their suggestions. Both of the answer being given by both groups of respondent showed the relationship between each other's. The disabled user is stated the opinion that they have and the answer will help much in helping the library to improve.

5.0 DISCUSSION

In sum, the findings from this study showed that disabled user which also the students at University Malaya shows a positive feedback regarding the services and technology that's been provided in the Central Library. It is easily said, the disabled user is satisfied with both of the aspect that being used to measure the satisfaction of the users. Additionally, this study demonstrates that the efficiency of services being provided could lead to the satisfaction of the disabled users as they need the extra attention and care from the library itself. Meanwhile the latest technology is really helpful to the users as they need the technology to help them in

456

completed their task and to help them in retrieving certain materials. The findings from this study also offer numbers of contributions to the existing literature.

First, this study adds to our understanding of the user's need regarding the services that being provided in the library.The previous study as being done by Xi Shi and Sarah Levy (2005) highlight on the library services assessment. The assessment is important aspects and factors that will lead the library to get the idea what is the needs and don't for the library to use and sustain in their library, the assessment will help much the library to ensure to provide the best services and also technologies in the library for the disabled users specifically. This is where the services are one of the elements that should be considered in serve the disabled user. In contrast, this study provides the opinion and level of satisfaction of the disabled user based on two of the aspect and element being discussed. The assessment had also been given and distribute among the user in the library, for both physically disabled and also without any impairment. The assessment could give a clearer idea of the overall performance of the library at a glance of the answer given by the users.

Second, our study adds to the list of possible aspects that relate to the technologies that being used in the library. The current technologies that had been implemented are fulfill their basic needs. There is no specific previous study that has been done towards the satisfaction of technologies in libraries. This study could be used as reference for other library that also doing the same research. In the research held by Todaro **(2005)** in research entitle library services for people with disabilities in Argentina, it aims to determine the status of the library services especially for the visually impaired and physically disabled user in Argentina.   This study was also being done with the same aim which to discover the disabled user opinion regarding the services and technologies provided. The previous study was also using the interview as their method to gain information on how the services and technology are needed to implement for the disabled which precisely for the visually impaired. The current research being done are interviewing the direct respondent that could give their own personal opinion and suggestion regarding what need to be implemented in the library, which is the disabled student that used the library services and technologies. This will then show that the importance of interviewing the direct respondent that are much closed to the field and environment, the library will then get a very concise idea on the right decision to be made in implementing and prepared the services and also technologies. Thirdly, with this research study, we can also compare and contrast with the previous study regarding the country environment. In the research being done by Koulikourdi (2007), with a title of library services for people with disabilities in Greece. It is stated that Greece was a country that really consider the disabilities in terms of their educational environment, the concern was starting at the first half of the twentieth century in the country which is Greece (Darais, 2001). In the study, it was also stated that the academic libraries in Greece, having a quite slow response towards the disabled users need, whereby it is until the year of 2007 (Patragkou et al. 2001). In the context of our country, Malaysia, the government does put their efforts in serving and providing the services and technology that needed by the disabled. The efforts of the other organization, including the library are actually based on their own willingness and consideration on what they need to do and implement to improve their services towards the disabled users and students. This study shows the efforts

that being made by Central Library, University Malaya should be praised and should be used as an example by other libraries, it is to ensure that all the users are being treated and concern in a same way without prejudice.

6.0 LIMITATIONS AND SUGGESTIONS

This research study is not without any limitations. This study shows perception from two disabled students and also one of the librarians which it might not presenting the total perceptions and opinion with others. Potential limitations of this approach are the possible differences might exist between student's perceptions and the reality (Linan, 2008).Since the number of disabled users that are specified as blind user are being the main research study, it might not reflect for another type of disabled user.

The other limitations are the time constrains. These include the time used in engaging with the respondents. The time is limited and that lead to the barriers in collecting enough data from a respondent, other than that, the time constrains was also became a limitation because, this research can't provide opinion much of the disabled user in the Central Library, University Malaya.

There are a few suggestions that could be implemented and used in future research. The first suggestions are the future researchers could extend the research searching by include other types of disabled user's as for this research are only focusing on the blind user. With that, the organizations which are the Central Library, University Malaya could enhance more their disabled user needs. For example, the research could be done towards the deaf and user with physical disabilities. This will do the research to become one step ahead of this current research.

The next suggestions are regarding the library itself. The Central Library is already trying to provide to the disabled user with the basic need as been explained in this article. The library could take one more way in providing the best services and facilities in the University Malaya by doing some research through reading on the Internet or observe the other oversea library on how they serve their disabled user through the services and also facilities. The software and hardware that could be implemented in the library. This will also attract other disabled student to consider in pursuing their study in University Malaya as because they will tend to choose places that providing better service ad facility for them in studying and learning.

7.0 CONCLUSION

In conclusion, the needs of disabled user are one of the factors that need to be considered by all libraries, not only in Central Library, University Malaya. The library must be concerned with what they really want and need in a way to let them get their task and learning done. Disabled user is facing much difficulty rather than the normal user does, because as for this research that being done, the blind user facing problems as such to search and locate the materials, to do their task and some other barriers. This is where the library must play their important role in provide sufficient needs in term of the services and also facilities. I have found out that Central Library, University Malaya had done a good job in providing the basic needs of their disabled user, the library just needs to keep up to date in improving their services on what

is the latest facilities that they could implement in the library. Improvement is a must to be done all time. In short, the improvement could be done by more future studies must be done in a way to get much recent findings regarding the issues arise that involved the disabled user's.

REFERENCES

Academic Performance. Retrieved 31 December 2015, from http://connection.ebscohost.com/c/articles/61052567/factors-affecting-students-academic- performance

Anyira, I. E., & Anyira, I. E. (2011). *The Anatomy of Library Users in the 21st Century* .The Anatomy of Library Users in the 21st Century. Retrieved from http://unllib.unl.edu/LPP/

Barry, J., & Barry, J. (2012*). Assistive Technology in Libraries for Patrons with Disabilities : An Annotated Bibliography.* Retrieved 7 October 2016, from http://www.pages.drexel.edu/~jeb397/final/Annotated%20Bibliography.pdf

Beaton, M. (2005), Glasgow City Council: library, information and learning services for disabled people in Glasgow, Library Review, 54(8), 472 – 478. Retrieved from http://dx.doi.org/10.1108/00242530510619174

Duran, M.-. (2007). What is a problem statement ?, *29*, 307–309. http://doi.org/10.1016/j.lisr.2007.06.001

Kerbs, R. W. (2005). Social and ethical considerations in virtual worlds. *The Electronic Library*, *23*(5), 539–546. http://doi.org/10.1108/02640470510631254

Khailova, L. (2014), *Selected reference sources in disability studies: an annotated bibliography* , Reference Reviews, 28 (8), 2 – 6. Retrieved from

Koulikourdi, A., & Koulikourdi, A. (2008). *Library services for people with disabilities in Greece*. http://doi.org/10.1108/00242530810854017

Krauss, S. E., & Putra, U. (2005). Research Paradigms and Meaning Making : A Primer, *10*(4), 758–770. Retrieved from http://www.nova.edu/ssss/QR/QR10-4/krauss.pdf

Library, T., State, C., Marcos, S., Library, T., State, C., Marcos, S., … Bill, L. (2016). *Library Services for Users with Disabilities Telephone / Telecommunications Device for the Deaf* :Research questions, (760), 5–9. Retrieved from https://biblio.csusm.edu/content/library?services?users?disabilities

Main, H., Search, M., & Members, C. (2016). Guidelines on library standards for people with disabilities, 1–13. Retrieved from https://www.alia.org.au/about?alia/policies?and?guidelines/alia?policies/guidelines?library?standards?people?disabilities

Mass.Gov (2006), *Special Educations*: Physical Impairement, Retrieved from http://www.doe.mass.edu/sped/links/pi.html

Mcnulty, T., & Mcnulty, T. (2008). *Reference Service For Students With Disabilities* : Desktop Braille Publishing.. 21 (1), 37-43. Retrieved from http://dx.doi.org/10.1108/eb049174

Morgan, G., & Morgan, G. (2008). *A word in your ear* : library services for print disabled readers in the digital age. 21(3), 234-239.Retrieved from http://doi.org/10.1108/02640470310480489

Ochoggia, R. E. (2003), *Persons with Disabilities Bill 2002: implications concerning visual disabilities for academic library and information services in Kenya*, New Library World, 104 (7/8), 307 – 312. Retrieved from http://dx.doi.org/10.1108/03074800310488086

Ochoggia, R. E. (2005). *Persons with Disabilities Bill 2002* : implications concerning visual disabilities for academic library and information services in Kenya, 104(7/8), 307-312. Retrieved fromhttp://doi.org/10.1108/03074800310488086

Pinder, C. (2005), *Customers with disabilities: the academic library response*, Library Review, 54(8),464 – 471. Retrieved from   http://dx.doi.org/10.1108/00242530510619165

Pionk , J.J. (2016), *Sustainable library services for all*, Library Management, 37 (6/7), 317 – 325.   Retrieved from http://dx.doi.org/10.1108/LM-04-2016-0030

Shahin, A. (n.d.). *SERVQUAL and Model of Service Quality Gaps* : A Framework for Determining and Prioritizing Critical Factors in Delivering Quality Services. Retrieved from http://www.proserv.nu/b/Docs/Servqual.pdf

Simmons, B. (2015, January 9). *The tale of two Flaccos*. Retrieved from http://grantland.com/the-   triangle/the-tale-of-two-flaccos/

Song, Z.W. & Chunming, L. L. (2012), *An analysis of the development of China Digital Library for   Visual Impairment website*, The Electronic Library, 30 (6), 756 – 763. Retrieved from   http://dx.doi.org/10.1108/14769018199900046

Taylor, M. (2004), *Widening participation into higher education for disabled students*, Education   +   Training,   46   (1)   40   –   48.   Retrieved   from http://dx.doi.org/10.1108/00400910410518214

Tech, L. H., Deines-jones, C., & Deines-jones, C. (2005*). Access To Library Internet Services For Patrons With Disabilitie*s : Pragmatic Considerations For Developers, 14(1), 57-68. Retrieved from http://dx.doi.org/10.1108/eb047982

Teens Health (2016), *Visual Impairment*, Retrieved from http://kidshealth.org/en/teens/visual-impairment.html

The University of Malaya Library. (n.d.). Retrieved October 7, 2016, from http://www.umlib.um.edu.my/

The University of Malaya. (n.d.). *Welcome to University Malaya*. Retrieved October 7, 2016, from http://www.um.edu.my/

Todaro, A. J., & Todaro, A. J. (2006*). Library services for people with disabilities in Argentina*. 106 (5/6), 253-268. Retrieved from http://doi.org/10.1108/03074800510595869

Todaro, A.J.(2005), *Library services for people with disabilities in Argentina*, New Library World, 106 (5/6), 253 – 268. Retrieved from http://dx.doi.org/10.1108/03074800510595869

Yoon, H.Y. & Kim, S.Y. (2011), *Development strategy of the alternative format materials for disabled people in Korea*, Aslib Proceedings, 63 (4), 380 - 398 Retrieved from http://dx.doi.org/10.1108/00012531111148976