

Rethinking Contemporary Library Environment as a Social Learning Centre

Hozan Latif Rauf

Submitted to the
Institute of Graduate Studies and Research
in partial fulfilment of the requirements for the degree of

Master of Science
in
Interior Architecture

Eastern Mediterranean University
February 2016
Gazimağusa, North Cyprus

Approval of the Institute of Graduate Studies and Research

Prof. Dr. Cem Tanova
Acting Director

I certify that this thesis satisfies the requirements as a thesis for the degree of Master of Science in Interior Architecture.

Prof. Dr. Uğur Ulaş Dağlı
Chair, Department of Interior Architecture

We certify that we have read this thesis and that in our opinion it is fully adequate in scope and quality as a thesis for the degree of Master of Science in Interior Architecture.

Asst. Prof. Dr. Münevver Özgür Özersay
Supervisor

Examining Committee

1. Assoc. Prof. Dr. Maya Z. N. Öztürk

2. Asst. Prof. Dr. Guita Farvarisadri

3. Asst. Prof. Dr. Münevver Özgür Özersay

ABSTRACT

In the era of digitalization and dominance of Internet search, student needs related to contemporary academic library spaces have changed. In search of ways for answering these changing needs of students, most universities have started to transform their spaces. Architects and interior architects/designers have done little research to guide such a transformation. This study aims to overcome this gap by thoroughly examining and analysing existing literature and providing an in-depth investigation on Eastern Mediterranean University main library as a case. The research design is a “mixed methods” one, involving the combination of qualitative and quantitative research and data in the study. It starts as a qualitative one with on-site observations and informal interviews. The outcomes from this phase are used to construct the second quantitative phase at which the data are collected through structured questionnaires. The results reveal that, EMU main library does not fully coincide with the essential characteristics for contemporary academic libraries. The criteria of this research could be used as guidance for evaluating academic libraries, which need a transformation. As a conclusion, the study provides some suggestions to help EMU main library re-define its spaces and to reclaim its place on the campus.

Keywords: Contemporary academic libraries, transformation, interior space characteristics, social learning space characteristics.

ÖZ

Dijitalleşme ve internette arama egemenliği çağında, kütüphane mekanları ile ilişkili çağdaş gereksinimler de değişti. Şimdi, sıklıkla, birçok kütüphane kullanıcılarına son zamanlarda “öğrenim müşterekleri (ortak faydalandığımız öğrenim alanları)” şeklinde de ifade edilen konforlu mekanlar sunmak üzere kendini yenileme sürecindedir. Doğu Akdeniz Üniversitesi'nin merkezi kütüphanesi de benzer bir anlamda yenilenme sürecine girmesi gerekmektedir. Halbuki, şu anda, böylesi bir dönüşümü yönlendirebilecek nitelikte bir çalışma yoktur. Bu araştırma, mevcut literature derinlemesine tarayarak ve öğrencilerden de bilgi toplayarak bu açığı kapatmayı amaçlamaktadır. Araştırma tasarımı, çalışma sürecinde, nitel ve nicel araştırma ve veri kombinasyonlarını içeren "karma yöntemler" üzerine dayandırılmıştır. Araştırma, yerinde yapılan gözlemler ve açık uçlu görüşmelerle, nitel bir çalışma olarak başlar. Bu aşamanın sonuçları, ikinci, nicel araştırma fazını oluşturmak için kullanılır. Bu bölümde, veriler yapılandırılmış anketler aracılığıyla toplanmıştır. Sonuçlar, DAÜ merkezi kütüphanesinin, çağdaş kütüphane özellikleri ile tam olarak örtüşmemekte olduğunu ortaya koymaktadır. Bu araştırma kapsamında kullanılan değerlendirme kriterleri diğer başka dönüşüm ihtiyacı içinde olan akademik kütüphaneler için de kullanılabilir. Sonuç olarak bu çalışma, DAÜ merkezi kütüphane alanlarının yenilenmesi ve bu kütüphanenin kampüsteki önemli yerini yeniden geri kazanması için yardımcı olabilecek bazı somut öneriler sunar.

Anahtar sözcükler: Çağdaş akademik kütüphaneler; değişim, iç mekan özellikleri, sosyal öğrenim mekan özellikleri.

To four blessed lives

My husband; the one who strengthened me with his life

My parents; who got white haired to have me splendid

My children; ever supporters and life schooling of my life

*And my lovely supervisor; who advised me with her absolute
support and touches*

ACKNOWLEDGEMENT

Firstly, I would like to express my sincere gratitude to my advisor Asst. Prof. Dr. Münevver Özgür Özersay for the continuous regarding my thesis study and related research, for her patience, motivation, and immense knowledge. Her guidance helped me at all the times while making my research and writing this thesis. I could not have imagined having a better advisor and mentor for my study.

Besides my advisor, I would like to thank the rest of my thesis committee: Assoc. Prof. Dr. Maya Z. N. Öztürk and Asst. Prof. Dr. Guita Farvarisadri, for their insightful comments and encouragements.

My sincere thanks also goes to Asst. Prof. Dr. Nilgün Hancıoğlu Eldridge, who guides me and encourages me as a wonderful English instructor during my master studying at EMU, She has always aided me as an instructor and as a friend.

Many thanks go to my friends, Eliz Erdenizci, Ceyhun Uludag, Gözde Pırlanta, Pınar Sabancı, Ahmed Ismail Hassan, and Pooya Lotfabadi. Without them I could not finish my questionnaires.

My truthful thanks also goes to one by one of each members of the staff Özey Oral Library. During my observations they helped me a lot.

I would like to thank my husband and my best friend Sardar for supporting me spiritually throughout writing this thesis and my life in general.

TABLE OF CONTENTS

ABSTRACT.....	iii
ÖZ	iv
DEDICATION	v
ACKNOWLEDGEMENT	vi
LIST OF TABLES.....	x
LIST OF FIGURES.....	xi
LIST OF GRAPHS	xiii
1 INTRODUCTION	1
1.1 Background of the Problem.....	1
1.2 Problem Statement.....	5
1.3 Aims and Objectives.....	6
1.4 Research Questions.....	7
1.5 Proposed Methodology.....	7
1.6 Outline of the Study.....	9
1.7 Limitations of the Study.....	10
2 LIBRARIES.....	12
2.1 Understanding Libraries.....	12
2.2 Historical Background.....	14
2.2.1 Invention of Script.....	15
2.2.2 Invention of Printing.....	20
2.2.3 Invention of Computerized Technology and Digitalization.....	22
2.3 Towards Contemporary Library Environments	26
3 TRANSFORMATION OF LIBRARIES	29

3.1 Understanding the Needs for Transforming Libraries	29
3.2 Physical Environment Considerations	33
3.2.1 Places of Socialization.....	33
3.2.2 Smart Spaces for All.....	34
3.2.3 Inclusiveness.....	35
3.2.4 Human Comfort Issues	36
3.3 Social Environment Considerations	40
3.3.1 Collaboration	40
3.3.2 Creativity	42
4 CASE STUDY: ÖZAY ORAL LIBRARY.....	46
4.1 Overall Design of the Study:.....	46
4.2 Özay Oral Library	47
4.3 Data Analysis	53
4.3.1 Spaces for All.....	54
4.3.2 Smart Spaces	62
4.3.3 Spaces for Socialization.....	65
4.3.4 Welcoming Entrance.....	67
4.3.5 Easy Access and Movability.....	71
4.3.6 Well-Solved Human Comfort Issues.....	75
4.4 Summary of the Findings.....	88
5 CONCLUSION	93
5.1 Brief Summary of the Study.....	93
5.2 Conclusion:	95
5.3 Summary of Key-problems and Recommendations:	96
REFERENCES.....	100

APPENDICES	109
Appendix A: English questionnaire.....	110
Appendix B: Turkish questionnaire.....	115

LIST OF TABLES

Table 1: The Questionnaires' distribution Number.....	51
Table 2: The Summary of Gender and Education Level of Participants	51
Table 3: Nationality of the Participants	52
Table 4: The Reasons Students Mentioned for not Using Özey Oral Library	58

LIST OF FIGURES

Figure 1: Ashurbanipal library and books	16
Figure 2: Ancient Alexandria library.....	17
Figure 3: Adud al-Daula Library	18
Figure 4: Al-Qarawiyyin University Library	19
Figure 5: Mob Quadrangle Library	19
Figure 6: Early 20 th century libraries.....	21
Figure 7: Middle 20 th century libraries after WW2, a movable library	22
Figure 8: Late 20 th century university libraries, beginning of interacting new technology into university libraries.....	23
Figure 9: The main library of the Edinburgh University, entering outside view into reading places	24
Figure 10: The entrance of Edinberg University library.....	25
Figure 11: Edinberg University library plans	25
Figure 12: Grand Valley State University Library	26
Figure 13: University of Aberdeen’s New Library in Scotland.....	27
Figure 14: University of Warsaw Library	28
Figure 15: Yesterday’s Libraries.....	30
Figure 16: Tomorrow’s Libraries.....	31
Figure17: Various types of seating, Iowa State University IRB (Peterson, 2013).....	37
Figure 18: Shenzhen Baoan, the library interior landscape.....	38
Figure 19: Helsinki University Main Library in Finland.....	40
Figure 20: Collaborative Academic Libraries.....	41
Figure 21: Innovative Academic Libraries.....	42

Figure 22: Innovative Academic Libraries.....	45
Figure 23: Working process in the case study.....	47
Figure 24: Main library of Eastern Mediterranean University.....	49
Figure 25: The inter-relations between the three forms of results.....	54
Figure 26: EMU library reading halls.....	56
Figure27: EMU library reading places.....	56
Figure 28: Internet connection problems in EMU library.....	63
Figure 29: Usage guidance booklets of EMU library.....	64
Figure 30: Outside Kiosks around EMU library.....	66
Figure 31: Some social and active sections in EMU main-library.....	66
Figure 32: EMU library main entrance and information boards.....	68
Figure 33: EMU library main entrance.....	69
Figure 34: Location of the library in EMU campus.....	71
Figure 35: The main entrance of EMU main-library.....	72
Figure 36: EMU main library main stairs.....	72
Figure 37: the bookshelves arrangement in EMU library.....	73
Figure 38: Photocopy Room of EMU library.....	73
Figure 39: Colour in interior spaces of EMU library.....	76
Figure 40: Brown glass of windows and skylight in EMU library.....	77
Figure 41: Heating and cooling system makes noise in EMU library.....	78
Figure 42: Outdoor electric generator making noise, near reading places.....	78
Figure 43: Central heating and cooling system in EMU library.....	79
Figure 44: One of the air-ducts in EMU library.....	79
Figure 45: EMU Library chairs in reading places.....	80

LIST OF GRAPHS

Graph 1: Participants' department.....	53
Graph 2: Use of EMU main library	57
Graph 3: Students' familiarity with virtual library.....	59
Graph 4: Easy and difficulty level of virtual library by students	60
Graph 5: Individual and group study preference by students based on their departments	60
Graph 6: Group study, Individual study and both.....	61
Graph 7: Frequency of using EMU main library in a semester.....	61
Graph 8: Hours spending in the library by students.....	62
Graph 9: Using students' Wi-Fi inside the library.....	64
Graph 10: Reasons of not using the library's network.....	65
Graph 11: Cafeteria existing	67
Graph 12: Necessity of Cafeteria	67
Graph 13: students' feeling about the reception staff.....	69
Graph 14: first time students' feeling and nowadays feeling in the reception.....	70
Graph 15: Easiness and difficulty to get to the library	74
Graph 16: Accessibility inside the library.....	74
Graph 17: Evaluation of entrance according to special needs	75
Graph 18: Effects of the physical environment inside the library	80
Graph 19: Colour for interiors of the library	81
Graph 20: Influences of direct sunlight inside the library.....	81
Graph 21: Florescent lighting	82
Graph 22: Design of lighting system in the library.....	82

Graph 23: Design of acoustic panels in the library.....	83
Graph 24: Graph 24: Having sound inside the library.....	83
Graph 25: Entering outside noise into the library	84
Graph 26: Hot and cold effects on concentration of the students inside the library...84	
Graph 27: Difference in temperature between the spaces	85
Graph 28: Comfortability of the studying chairs	85
Graph 29: Having back pain during staying in the library.....	86
Graph 30: Tables and chairs capacity to studying materials	86
Graph 31: Wet spaces	87
Graph 32: Wet spaces for special needs.....	87

Chapter 1

INTRODUCTION

This chapter starts with background information to the study. Then, the problem, aims and objectives and the proposed methodology for the study are stated. Following this, an outline of the thesis is provided and the limitations of the study are explained.

1.1 Background of the Problem

“If the classroom is the heart of educational place, the library is its soul.” (Orsdel, 2010).

For keeping and sharing the material among students and instructors each university needs an academic space. This space is called the ‘library’. Libraries have been always a significant place to enhance the students’ performance, in other words, ‘learning’. Learning, is on one hand a very complicated activity, and on the other hand a very simple one. It is complicated because it includes much more than the university campus, the curriculum, instruction, and assessment. It involves a continuous interplay between a student’s body, mind, soul, diet, security, family, peers, friends, teachers, access to information etc. It is simple, because, actually, even if we might philosophize whatever over the matter, the students always learn. They learn from anything, including their daily experiences and environment. In general, they learn from TV, the Internet, and the space... In specific, when

considering the university life and the library relationship they learn from books and the library environments.

Dictionary.com defines library as “a place set apart to contain books, periodicals, and other material for reading, viewing, listening, study, or reference, as a room, set of rooms, or building where books may be read or borrowed, or a collection of manuscripts, publications, and other materials for reading, viewing, listening, study, or reference.” (URL43). Parallel to this definition, recent discourse on libraries is also revealing some alternative explanations for understanding libraries as contemporary learning environments. For example; Sari Feldman, the president of American Library Association, when in November 2015, was interviewed by Jeffrey R. Young for the Chronicle of Higher Education, mentioned the following:

I certainly think that... campus libraries, are going through this incredible transformation. And it's so much about the people who work there and the talent they bring to support student research, student researchers, and faculty researchers. The place, the actual library space, is undergoing a transformation because there's so much more collaborative activity and making. The creative commons is happening there. And then the projects, the platform of what's happening, and libraries are not only gaining digital content from outside vendors, but they're creating digital content. (URL 26)

From ancient civilization, people have sought out knowledge and attempted to attain it. They started to build institutions and universities, as well as they recorded their information, even by carving on stones or writing on animal leathers and then on papers. This essence of obtaining knowledge made human reaching the point to open universities. The oldest university library in the world is the Buddhist Takshila University, which dates back to approximately 600 B.C. (Oswald, 2015). Since then, library needs were altered by time. The needs of students have changed day by day because of the developments that happen due to technological developments around

the world. For this reason, nowadays, many researches are trying to evaluate the university libraries in order to achieve the definition of an appropriate 21st century library space. In many studies, what comes to the forefront is the argument that library spaces need to be transformed mainly by removing all barriers (both physical and psychological). Tricia Kelleher, as a principal, regarding the reconstructed school library, writes:

Our creation of a Cabinet of Curiosities or Wunderkammer, as it is also known, is the logical next step in the evolution of a library in a digital age. Yes, there are books and the obligatory bean bags for relaxed reading in the space, but the central purpose of this new learning environment is to encourage curiosity untrammelled by preconceptions or indeed physical barriers. (URL 27)

These arguments strongly resonate with literature related to universal design. According to the first of the seven principles of universal design, removing barriers to access delivers an advantage that will improve **all** user experiences. That is to say, not only people with special needs, but everyone. In their book called “Universal Design: Creating Inclusive Environments”, the writers Steinfeld and Maisel refer to the UN Conventions, in order to demonstrate that, social participation as the most important outcome of universal design is a vital part of human rights. The referred convention is as follows:

Many of the conventions specifically include statements that prohibit discrimination in political and public life, healthcare, education, housing, and other activities that are essential for social participation, but the Convention on the Rights of People with Disabilities specifically mentions the provision of access to public accommodations, transportation, housing and information and communication technologies, and it includes a statement that countries should conduct research and education in universal design (UN 2006). (p. 160)

The date of the current study shows 2016. That is ten years after the above referred UN Convention (2006). During these ten years, many things changed and universal

design, alone is no longer enough to understand the problems of contemporary academic library spaces. The librarians are trying to focus on research that can shape their approaches to the design and re-design of their library interiors. Today, librarians have understood that libraries can have a positive impact on students' learning, if they no longer insist on keeping libraries as a very traditional, silent space merely for individual study. As mentioned earlier, they are searching for possible ways of creating spaces in a "Learning Commons" sense. According to Loerstscher:

This learning commons is both a physical and a virtual space that's staffed not just by teacher-librarians but also by other school specialists who, like us, are having trouble getting into the classroom and getting kids' attention. Support staff operates the open commons so that the specialists such as literacy coaches, teacher technologists, teacher-librarians, art teachers, music teachers, and P.E. teachers can spend time creating learning experiences and co-teaching. The main objective of the open commons is to showcase the school's best teaching and learning experiences and co-teaching. The main objective of the open commons is to showcase the school's best teaching and learning practices. (URL 29)

What comes up in literature, as a significant prerequisite for learning commons environments, is that it should be a welcoming and comfortable environment. On a trustworthy website edutopia.com, which "aims at helping educators and administrators change the way students learn by affecting the way they interact", a very striking article called "21st Century Libraries: Learning Commons" appeared on January 14, 2015, where, Beth Holland; an instructor and communications coordinator wrote:

When every student has the potential to carry a global library on the device in his or her pocket, the role of physical libraries may become even more important, not just a place to house resources, but one in which to create meaning from them. The libraries of the 21st century provide a welcoming common space that encourages exploration, creation, and collaboration between students, teachers, and a broader community. (URL 30)

Upon searching Wikipedia with the key words “learning commons”, well-detailed information shows up, where there the researcher can read a part called “Importance of Physical Space”. There it is written: “Safe, inclusive and welcoming environments throughout a school are imperative to meet the diverse abilities and learning styles of individuals, teams and groups.” (URL 31)

David Loerstscher, who is an internationally respected leader in school librarianship, an innovative educational researcher, and a learning commons revolutionary, already back in 2008 wrote at the online “School Library Journal”, an article with a title: “Flip This Library: School Libraries Need a Revolution (Not an Evolution)”. In this article Loerstscher mentions clearly that if, the school libraries want to “become relevant and connect with the latest generation of learners and teachers, the library has to be totally redesigned from the vantage point of the users”. (URL 29)

1.2 Problem Statement

On university campuses, the library has a crucial supportive role in enriching students’ academic performance. To achieve this, libraries need an appropriate design in order to be able to attract students. Interior architects and architects can perform this role by considering all the needs of the client (the library management), the needs of the students as users and the requirements of this era of technology so as to incorporate these to the design of physical environment of their university libraries.

From the end of the mid-20th century, technology gradually started to integrate into libraries, making students not much interested in the physical library environments. Instead, they started to prefer searching for sources on their own computers, which is easier than searching through books in physical places. Today’s academic library

spaces are more important with the (potential) supportive role they have, than their role as book collections and functions devoid of human interaction.

From this point of view, currently, all around the world, there are serious attempts to transform academic libraries into social learning centres in order to provide a welcoming environment for students. Although many researchers, educational managers, and librarians have focused on the issue, there is little research done by interior architects and architects.

Eastern Mediterranean University (EMU from hereon) has 20,000 current enrolled students, out of whom only a small percentage prefers to visit its main library as revealed by the very low number of books (only 1057), which were borrowed during one semester. Hence, EMU main library needs to reclaim its students by updating itself in terms of contemporary spatial and technological needs.

1.3 Aims and Objectives

The main aim of this study is to explore and understand the needs of contemporary academic libraries as social learning centres. It aims to achieve this goal through an investigation of the transformation of academic libraries through time mainly as related to the changing functions, spatial components, and different qualities of space in the era of digitalization.

At the same time, this study, hopes to support the theoretical findings through case-based evidence and student experiences. The current study, aims to use the EMU main library as a case study, which is at the moment in need of urgent transformation.

It is hoped that, the results of this study will help to bridge the gap in interior architectural research to better understand the student expectations from a contemporary, welcoming academic library as a social learning centre.

1.4 Research Questions

This research aims to answer the following research questions:

- What are the essential characteristics of a contemporary academic library?
- What are the major key-themes appearing during the transformation of libraries?
- What are the students' perceptions on EMU main library spaces?

1.5 Proposed Methodology

The research methodology of this “mixed methods” study involves the combination of qualitative and quantitative research and data in the study. It starts as a qualitative one, with on-site observations. The outcomes from this phase are used to construct the second quantitative phase, where the data are collected through structured questionnaires. The questionnaire is intended to test the validity of the results of the qualitative part (observations).

So as to reach the goals of the research, Eastern Mediterranean University (EMU from here on) main library, was used as a case. EMU has a leading role amongst the universities in the Middle East. With an increasing number of students, at the moment it has above 20,000 students enrolled in the current academic year. At the moment, for many EMU students, visiting the main library, which is called “Özay Oral Library” is not a favourite act, habit or ritual they attribute to their learning experiences.

In this thesis it is argued that the students at EMU are not very enthusiastic about using the main library because they are not exposed to an attractive, inclusive, welcoming, and inspiring library environment. Based upon this assumption, this study investigates the both the physical and social learning space characteristics of EMU main library spaces, through on-site observations and the sensitivities of, because they are the ones for which the substantiation of the benefits of this in-depth investigation might be greatest.

Throughout research, data was collected and examined through the following procedures: Literature survey, on site observations, informal interviews with special needs students, and a quantitative survey made with students. Literature survey yielded information to develop some criteria to understand contemporary academic library spaces in a holistic way. With these criteria in mind, the researched made observations and did the informal interviews with special needs students. The outcomes of the observations and the informal interviews were analysed and the derived keywords were re-investigated through the student survey (structured questionnaire). Two groups of students participated in the quantitative survey: Students, who were present in the library spaces and hence were actually in the process of using in these spaces and students of Faculty of Architecture. The collected data was then put into tables and graphs in Microsoft Excel Program to make information more visually understandable and hence to arrive at certain results, discussions and conclusions.

1.6 Outline of the Study

This study is presented in five chapters. These are summarized below:

Chapter one: In this section of the study, there is the introduction chapter, which shapes the brief background to the subject, the problem that this study is based on, the main aims of this research, methodology of the study, and at the end of this chapter, the limitations of the study are presented.

Chapter two: In this section, the definition of the library is illustrated. A brief historical background is provided, where the transformation of libraries during the last century is explained.

Chapter three: This chapter contains the key-themes about underlying the transformation of libraries to social learning centres. At the beginning, contemporary needs in libraries are illustrated. After that the criteria for understanding these changes and needs are derived from literature.

Chapter four: This chapter contains information about the case of this study, as well as the methods that were used to approach its targets. The tactics for collecting data, the design of the questionnaire, and the method of analysis of the collected data are also provided. The results and the findings that are explored according to the previous chapters by analysing each of the students' answers given via questionnaires, and the observations that were done in the EMU-main library during the study.

Chapter five: The last chapter of this study contains a summary of the study, some recommendations for those who are interested in the future of EMU main library and for further research.

1.7 Limitations of the Study

The first limitation of the study is related to the conceptual framework of the study. There are many issues/constraints, which are related to the current and forthcoming problems of libraries all around the world. The role of the librarians, the library reserves (collections) methods for the digitalization of library materials, newly experimented media-studio spaces in libraries etc. are some examples to these. While taking into consideration that these issues are also crucial for contemporary libraries, this study focuses on two key-themes related to the space (mainly interior) characteristics of libraries. These two themes are: Physical Space Considerations, Social Learning Space Considerations.

The second limitation is about the context of the study. There are two more campus libraries at TRNC, which can relatively be compared to the EMU main library. These are: the Grand Library of Near East University and the main library of Middle East Technical University. Both libraries were built newly at around year 2000. This study does not yield any information about them. The questionnaire was prepared as a site-specific one, and that site is related to only EMU main library.

The third limitation refers to the “type” of the library under investigation in this study. The research design was shaped through focusing on “academic” libraries, found on campuses only. There are many other types of libraries, such as public

libraries, children libraries etc. This study does not provide any detailed information about them.

Chapter 2

LIBRARIES

In this chapter, firstly, the concept of library in a traditional sense is explained. After that, a historical background about the libraries in the past is given in relation to the inventions of scripture, printing, and invention and implementation of computerized technology. Finally, the changes that have led to the contemporary library environment are presented.

2.1 Understanding the Library

There are many different ways in which the word 'library' seems to be used nowadays, from the traditional public library to the digital or virtual library. Briefly, a library is a "collection of books and information sources, which is accessible for people to read and borrow". Similarly, Oxford dictionary defines library as "a building or room containing collections of books, periodicals, and sometimes films and recorded music for use or borrowing by the public or the members of an institution" (URL34). Originally, the word 'library' came from the Latin word "liber" which means 'a book'. In the beginning, library was in harmony with its word of origin. It was 'a place where books were written or kept'. But nowadays, a broader definition of library is needed in order to understand its role in the society. American Library Association (ALA), based on The Whole Library Handbook offers this definition:

A library is a collection of resources in a variety of formats that is organized by information professionals or other experts who provide convenient physical, digital, bibliographic, or intellectual access and offer targeted services and programs with the mission of educating, informing, or entertaining a variety of

audiences and the goal of stimulating individual learning and advancing society as a whole (URL 42).

As there are many different approaches to contemporary libraries, there are also many different types of libraries. Each type serves a different layer of the society. These libraries can be classified as public, academic, special, and national libraries as briefly described below.

Public Library

A public library is “a public institution or establishment charged with the care of collection of books and the duty of making them accessible to those who require the use of them” (Ranganathan, 2011). Public libraries serve all castes of community ‘from cradle to grave’. Public libraries often have departments specified to youth, teens, and adults. (Gupta, J. 2015), (ALA, 2015), Certified Public Library Administrator, (CPLA) Chicago, in the US, on the other hand defines public library as:

An entity that is established under state enabling laws or regulators to serve a community, district, or region, and that provides at least the following: 1) an organized collection of printed or other library materials, or a combination thereof; 2) paid staff; 3) an established schedule in which services of the staff are available to the public; 4) the facilities necessary to support such a collection, staff, and schedule; and 5) is supported in whole or in part with public funds. (CPLA, 2014)

Academic Library

An academic library is “is associated or attached with any educational institution to support its educational programmes” (CPLA, 2014).

There are many types of academic libraries such as, university library, college library, and school library. “A library attached or associated with a university and used by students, teachers, researchers, administrative staff etc. of the university as well as by

the other research workers, alumni outside the university is known as university library” (Gupta, 2015). Another type of academic library is college library that aids a college or a faculty, and is used by its students, instructors, and staff. A school library serves a high school, and, according to some of the resources, it is not considered an academic library.

Special Library

Another main type of library is the special library. This kind of library has a more specific meaning:

A library established, supported and administered by a business firm, private corporation, association, government agency, or other special interest group or agency to meet the information needs of its members or staff in pursuing the goals of the organization. Scope of collections and services is limited to the subject interest of the host or parent organization. (ALA, 2015)

National Library

National library is another type of library. This type of library is more like a national archive. “A national library keeps all documents of and about a nation under some legal provision and thus represents publications of and about the whole nation (Gupta, 2015)”. In addition to these above mentioned types, there are also two types, which are virtual/digital libraries and libraries for children. To understand the characteristics of each type, it is necessary to have a look of the history of progressing libraries, which is trying to illustrate below.

2.2 Historical Background

Libraries have existed for a long time. Ancient civilizations have used them to register their history through organizing collections of documents. Therefore, it can be said that they have a significant role in every community’s development. There is an academic discipline, which is devoted to the history of the libraries that is called

“Library History”. This is a hybrid discipline, which is an intersection of the fields of library science and historiography. There are many topics, which fall under the discipline of the Library History. Just to give an example, some of these are: Accessibility of collections, materials, arrangement of materials, protection of materials, language, etc. In this study, the role of libraries in education and the relation of this to the design of the physical environment are considered. Since the 1960s, in the field of education the influence of computerization and digitalization has been an important issue. Therefore, in this study, a historical flashback of libraries is provided, based on the evolution of “written text” throughout history, starting with the beginning of the possibility for the protection of information through the invention of the script, then, through the invention of printing and later through the technological revolution.

2.2.1 Invention of Script

To protect information and to write the history of ancient civilizations, people in the past wrote their victories on pieces of stones, mud, or even on animal skin. The first script used in southern Mesopotamia (part of modern Iraq) dates back to 4th millennium BC. These people used cuneiform in their writing, which is the earliest writing in the world. Therefore, the Sumerian Civilization needed a wide and an appropriate space to hold these big pieces, which led to the creation/foundation of the first library, Ashurbanipal Library. Which is located in southern Mesopotamia (now Iraq). Everything in this library, including books, was written on stone; (Wellisch, 1981), (URL35).



Figure 1: Ashurbanipal library and books (URL 1)

In the West, the first public libraries were established during the Roman Empire. Rome's first public library, the Royal Library in Alexandria, was established by Asinius Pollio. All the information was written by hand and on papyrus, which was made of tree extracts (Ewald, 2004), (Casson, 2001). This library was the first to employ an architectural design that separated works into Greek and Latin. All consequent Roman public libraries have this design.

One of the characteristics of library buildings in this period was that they used women's faces as an element of beauty, so in the interior spaces of these buildings, there are a lot of women's sculptures. There are women's faces even at the top of the columns. This can be clearly seen in Royal Alexandria Library (Franz, 2011). At that time, the Royal Alexandria Library was used as a teaching and a learning institution "..., the oldest library in the world, the Royal Library of Alexandria, was built in approximately 300 BC in Alexandria, Egypt... It functioned as a major learning centre in its time, it was accidentally burned down by Julius Caesar during the Alexandrian War..." (Jills, 2012).

The building was divided into two parts, museum, and library. There were some parts, such as classrooms, communal dining halls, and study centre, which served both these two sections. The museum was used as an independent part inside the library. Also the work of the interior design of this building was one of the important things that has been done, such as paintings and female's statues (Franz, 2011).

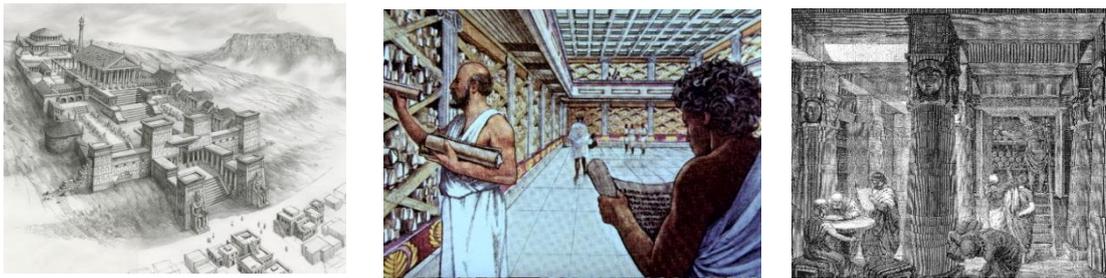


Figure 2: Ancient Alexandria library (URL 2)

As human civilizations progressed, the need for universities emerged. Parallel to the establishment of the universities, the essence of university libraries are the utmost precedents because of their crucial role in the educational process.

In 8th century, after the first Iranians and then the Arabs had imported the craft of papermaking from China, in the 9th century, the first public libraries started to appear in many Islamic cities. They were called "Halls of Science". In Shiraz, Adhud al-Daula, which dates back to 983 AD, was set up as a library, described by the medieval historian, al-Muqaddasi, as:

A complex of buildings surrounded by gardens with lakes and waterways. The buildings were topped with domes, and comprised an upper and a lower story with a total, according to the chief official, of 360 rooms.... In each department, catalogues were placed on a shelf... the rooms were furnished with carpets (Goeje, 1906).



Figure 3: Adud al-Daula Library (URL35)

Organization was a strength of Islamic Libraries during the Golden Age (7th -14th century). In this period, books were organized by subject, and within the subject, the materials were further organized by when the libraries gained the item, not by the last name of the author or the title of the book. Also, Islamic libraries may be the first to have implemented a catalogue of owned materials. The content of a bookshelf was recorded on paper and attached to the end of the shelf. Public libraries in this period were very popular along with Mosque, Private, and Academic Libraries. Instead of serving the high caste of society such as caliphs and princes, the information was offered to everyone. These buildings were also made for comfort of the readers and information seekers. The rooms had carpets for sitting and reading comfortably. Likewise, openings such as doors and windows were securely closed so as to protect patrons against cold drafts (Elayyan, 1990).

One of the academic libraries in this age is Al-Qarawiyyin University Library. It is the most previous university in the world which has the continuous function up to now. It is located in Fez, Morocco. It was built in 859AD by a woman who was called Fatima al –Fihri and it operated as a religious school. There were also lectures on foreign

languages and branches of science. As a building, Al-Qarawiyyin University still exists today, but as a function, it is changed into a mosque.

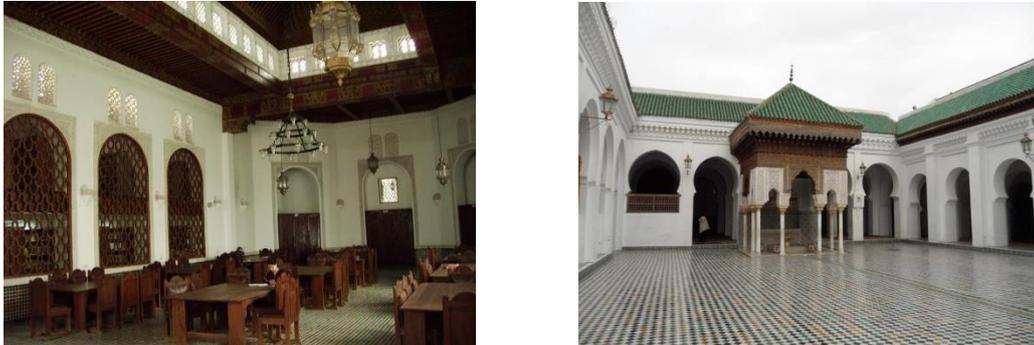


Figure 4: Al-Qarawiyyin University Library (URL 5)

In the same period in Europe, the concept of borrowing books started with deposits, which was usually amount of money or a book in equal value. Books were usually chained to the shelves, reflecting the fact that manuscripts, which are books were written by hand on decorative papers also these decorations were done by hand too.

One of the examples of the oldest university libraries which still exists today, is Mob Quadrangle University Library, which is the library of Merton University. This university, located in England, was built in 1264 AD. It consists of some quadrangles. In one of these quadrangles, in south and west side, there is the library. This part was built in 1373-78 AD.



Figure 5: Mob Quadrangle Library (URL 6)

Although libraries had an important role in the society in this period, the development and the increase in the number of books was difficult as they were written by hand. Hence, to protect books and to increase the number of books, an invention was of crucial importance, which is the invention of printing.

2.2.2 The Invention of Printing

After the printing machine was invented by Gutenberg in 1455, production of books had increased. This was an enlightenment period for European Libraries. The shelves became a very important part in libraries. Libraries gradually opened to the public, but still borrowing and taking books outside was not allowed in Europe. The national libraries were opened but the majority of people were forbidden. It was allowed to read books on desks instead of standing in front of the shelves. Huge hall, decorative interior spaces, a reading area with desks, and monumental buildings are the characteristics of this period. Libraries have developed and changed over time. In the 20th century, libraries, especially academic ones, have changed dramatically in terms of requirements. At the beginning of the century, libraries, like other functional buildings, were of prime importance. However, political circumstances and the world wars negatively affected them. Public libraries were more prominent at that time. People enthusiastically desired reading books, especially after the victory of the communist revolution in Russia (URL7). After the Russian revolution, one of the significant changes in library spaces was the design of a special area for children; before this period, young children were not welcomed in the libraries (Gisolfi et al., 2010). Gisolfi argues that “Before long, children’s reading rooms became a part of every well-planned public library, complete with appropriate book collections and specially trained children’s librarians to guide youngsters in their choices and encourage good reading habits” (Gisolfi et al., 2010).

At the beginning of this era, architects prioritized functions of the spaces, which is the use of the library spaces as reading places. They thought of other design elements to put in the service of functions. After that they paid attention to decoration. Arts & Crafts and Art Nouveau styles were applied to these buildings, architects used Flora & Fiona on the walls, and also they used Greek and Roman columns in interior designs.

As for the organization of books, the librarians categorized and arranged a list of books names in big boxes and put them in front of book shelves. People borrowed books by finding the names of books they wanted to borrow in these boxes. Readers had to write their names on a big file which was also on the same table of reading the books.

Another major point which was not thought of before was placing women's club inside public libraries. A small area under the name of 'a woman's meeting activity' was opened. Moreover, at the beginning of 1930s, and for the first time a space was provided for black people inside libraries, in United States (URL 30).



Figure 6: Early 20th century libraries (URL 7)

Whilst, the discussion is about the first half of twentieth century, it is logical to talk about World War II, the most destructive event in the history of humanity.

Millions of people were killed and 39 countries were involved in the war. People were deprived of reading anything. Libraries were damaged by the war like any other parts of the cities. At the end of the war, it was difficult to rebuild the library buildings, because people were not settled yet. Also, some people tried to collect books and store them. Some of them turned their own car into a mini library (URL2), (URL3). After the end of the world wars, the library has become a part of everyday life, and a space, small or big, has been allocated in homes for storing books. . Also public and university libraries were seen as indispensable life demands, because some people considered them as brain nurturing.



Figure 7: Middle 20th century libraries after WWII, a movable library (URL 8)

After the world wars, inventions towards the development of libraries continued. For keeping, and recording of the books, as well as creating databases technology was integrated into libraries and this started a new period for libraries.

2.2.3 Invention of Computerized Technology and Digitalization

This period was the beginning of a new period for university libraries. For the first time, technology interacted in university library in a different manner, University libraries became computerized to record sources and for the borrowing of books. Creating pace for the use of computers was another significant change. In addition, for the purpose of creating a meeting area, cafes were opened in libraries.

Circulation systems, touch screens, microfilm readers, the computerized card catalogues are some of the changes in library systems in the last decades of the 20th century.

However, the end of this century was a turning point for the beginning of a new development in the new century, which is full of technological developments.



Figure 8: Late 20th century university libraries, beginning of interacting new technology into university libraries (URL 10)

Since the beginning of the 21st century, the meaning of the library has changed. If it was ‘reading place’ in previous centuries, it has become a ‘social place’ in the 21st century. In this regard, all considerations of the 21st century that will be illustrated in next chapter are incorporated into these academic libraries (Kowalczyk, 2015).

When the era of technology started, most existing buildings had been built using simple technology. After a long period of time, some of them are nowadays being adapted in order to make them suitable for this era of high technology.

Edinburgh University Library in Scotland is one of the university libraries in the world that has been adapted to the changes of the time. This library has existed since 1587 in Edinburgh University but as a building it has changed from period to period. Finally,

in 1967, this building was modified to a multi-story eight floor library to cater for the university student population.

In 2007 a plan was devised for the redevelopment and the incorporation of contemporary needs. In spring 2013, the renovation was completed. The library overlooks to the attractive sight of its surroundings.



Figure 9: The main library of the Edinburgh University, entering outside view into reading places (URL 11)

Besides, a virtual library parallel to the physical library is in operation to serve the students in this university. The entrance of this building has an important role in inviting the students inside. The availability of professional staff to respond to students' questions inside is another positive point. When the students enter from the right side, there is a reception, where there is always a helpdesk staff and Library facilities staff to answer students' questions.



Figure 10: The entrance of Edinberg University library (URL 12)

After the renovation of this building, and with the addition of a cafeteria, exhibition room, music room, computer room and meeting suits, the usage of it changed from a reading place to social place. Copy printing facilities, appropriate accessibility inside the building and toilets are all present. All of these facilities can be found on some screens, put in the main entrance (IS information, 2014), (URL7) & (URL8).



Figure 11: Edinberg University library plans (URL 12)

Another library that was renovated according to contemporary needs in this century is Grand Valley State University Library. This library is located in Allendale, Michigan.

It was built in 1960s. After technological developments, in 2013, the university decided to renovate all branches of the university libraries. Lee Van Orsdel (who is the general director of Grand Valley State University Library) states that “Our students tell us what to do exactly” (URL 20, URL 21). The students who were using the libraries could see the shortcomings of the library environment. The interior spaces of this library have been changed according to students’ suggestions. Redesigning the shelves and interacting physical library with virtual library was another plan for attracting students. Also Orsdel argues that “one of the significant points to make students be mad about using the libraries is opening a group place” (Orsdel, 2014).



Figure 12: Grand Valley State University Library (URL 13)

2.3 Towards Contemporary Library Environments

In the 21st century, a lot of modern university libraries have been built and organized according to the requirements of this technological century. Virtual libraries have become a very significant part in every library, especially, in academic libraries. Libraries on university campuses have become social learning centres. This characteristic can be easily seen in library buildings constructed in this century.

University of Aberdeen was built in 1495 and it is well-known in the world for having a huge collection of books, some of which date back to the 13th century. In 2011, a new

library was designed for this university. It is located on 15,500 square meters, and it can embrace 14,000 students. “It is designed to provide for students a 21st-century learning and research experience” (URL 22).

Having the latest technology had a significant role in this library’s new design and creating a learning environment. The accessibility problem was solved by designing a spiral atrium in the heart of the building which interconnects all of the floors in an easy way. “The façade not only allows plenty of daylight to penetrate into the building but also offers a great view over the city of Aberdeen” (URL 23).



Figure 13: University of Aberdeen’s New Library in Scotland (URL 14)

Warsaw University Library, Poland is another example of the 21st century academic libraries. This academic building was opened in 1999, but its landscape roof was finished in 2002. It is one of the greatest and most beautiful European libraries and it is famous for its floor landscape. This library includes two different parts of garden areas. In the upper part the garden is 2000m² and in lower part it is 15000m²; connected by a fountain of flowing water. The design of this library offers an extensive view of Warsaw City. “It offers exceptional views to the Vistula River, fragments of the natural declivity, and the buildings situated downhill” (URL 16). This library is open to students and the citizens together, but it is designed in such a way that the visitors

never disturb students. As a building it consists of two parts and linked by a small passage which is covered by a glass-roof. It contains four floors and also accommodates some small rooms for rent for a few days or number of weeks. Music room, exhibition, theatre, debate room- or gathering room, are the most admired places which are used by all (URL 15).



Figure 14: University of Warsaw Library (URL 15)

Vertically, the building is divided into two parts. These two parts are connected by a clear passage, which is covered by a green area to integrate with nature and as a point for attracting students.

All the changes in libraries are geared towards transforming them into social learning spaces. This transformation has its own characteristics and contemporary needs so as to be accomplished according to students's requirements. All of these requirements will be presented in the next chapter.

Chapter 3

TRANSFORMATION OF LIBRARIES

In the previous chapter, firstly, the term ‘library’ was defined and types of libraries were introduced. Then, a historical background to the libraries was provided. This chapter takes the concept of libraries further in time and investigates different aspects of contemporary libraries through literature and other similar research.

3.1 Understanding the Need for Transforming Libraries

Libraries serve various layers of the society and the people they serve vary in numerous aspects too. Consequently, the ways in which libraries need to transform are very different. American Library Association (ALA) started an initiative called “The Libraries Transform Campaign” in order to increase public awareness of the need for transformation according to different values and services provided by libraries (URL 44).

On the campaign website, ALA provides an overview of the reasons underlying the need for the transformation of libraries. Briefly, the libraries need to transform because of the following reasons:

- Literacy still matters,
- Digital learning might function as a gateway to alternative learning styles,
- People need help to cope with an incredible amount of information,
- The digital divide is growing and there is a need to bridge this divide,
- People might feel more comfortable if covered non-alcoholic drinks (covered with lids) are allowed to be consumed in libraries,
- As cyber-bullying is increasing, online safety is becoming more important,
- Students need support to access expensive journals through digital subscriptions

- Libraries can help students gain actual research and critical thinking skills. (URL 42)

With the help of this campaign, ALA hopes to demonstrate the transformative nature of today's libraries and promote the significant role libraries have or could have in the digital age. Academic libraries are no exception. Regarding the contemporary conditions, they also need to go through a transformation in relation to students' changing learning styles, needs and demands.

Throughout literature, the overall patterns of the differences between past and future academic libraries can be seen very clearly. Yesterday's academic libraries were all about books, term papers and other documents. They were about getting information, finding and organizing this information by a set of rules. Library visitors were silent individuals or they were at least expected to be silent. These libraries had traditional furniture and shelves. They had program goals, copyright enforcement, orders, rules and policies, and developing print literacy.



Figure 15: Yesterday's Libraries (URL39)

At the same time, libraries will be more about helping users organize information in ways that make sense to them. Future libraries involve active groups, multimedia projects, online service and digital stuff. Their aim is helping students, teachers and whole campus meet their goals and also their individual needs, and providing counselling on intellectual property. Comfort, service, and developing multiple literacies-print, auditory and visual are of prime importance (Johnson, 2010).



Figure 16: Tomorrow's Libraries (URL40)

Based on the comparison of the characteristics of libraries from past and the desired ones for the future, it can be stated that academic libraries, which manage to go through a positive transformation, can enhance students' learning performance and at the same time give life to the university campuses they are located in and make them lively and active.

These characteristics can however differ from one location to another, from one researcher to another, and from one group of students' demands to another. These differences can be understood better through the following three studies:

Abbasi (2012), together with her team, is one of the researchers that created her own criteria to assess the interior space of Deakin university library. The researcher believes that every academic library should have, "positive image and identity,

welcoming and inviting entry, functionality and efficiency, flexibility and adaptability, variety of spaces to cater for different users and uses, being social and people-centred, a sense of place and inspiration, environmental comfort and sustainability, access, safety and security, and integration of technologies” (Abbasi, et al, 2012). These explanations are defined as TEAL (a Tool for the Evaluation of Academic Library Spaces) and students’ opinions were taken in consideration to renew this library.

Abbasi (2014) with a group from Queensland University evaluated this library so as to enable renovation. Here, they worked on six topics to evaluate the library spaces of Queensland University, which are to “be functional; be learner-centred; be environmentally sustainable; be socially inclusive; effectively integrate technology; and foster inspiration and student engagement” (Abbasi, et al, 2014). These Criteria are used for transforming academic libraries into social learning centres.

As far Orsdel reports in her presentation about re-imagination of the academic libraries, as a cut edge subject by analogy between libraries and public spaces which are most attractive to users. She thinks that today’s libraries have to be attractive spaces which have the potential for maximum activity as can be seen in a public market or an airport. Her main viewpoints could be summarized as:

- Having a place for group works and gatherings;
- Easiest refurbishment method so as to make changes to existing libraries;
- Having sociable places such as cafeteria and other luxurious places;
- Varieties of activity places, especially, providing some places for sitting and laying for whom that used to study in laying down.

In summary, transformation of academic libraries into social learning centres which are attractive, appropriate, and usable spaces can be classified into two categories, namely considerations of the physical environment and considerations of the social environment.

3.2 Physical Environment Considerations

The main changes in academic libraries in this century started with the changes in their functions. Entrance, being social places, and facilities for digitalized Research and Product, and furniture are the most focal points in functional considerations for contemporary academic libraries. All of these are illustrated below:

3.2.1 Places of Socialization

Nowadays the learning process tends to be more collaborative for university students, thus libraries so far have remained as learning symbols. For that reason, libraries and new learning stage need a compromise, as further sociable places in libraries would accelerate the learning process.

However, there are tons of information anywhere and anytime, students still continue going to libraries. Orsdel (2010), explains the reasons why students prefer libraries for their study:

- “• A convenient spot between classes
- A place to socialize with others and to be motivated by them
- A place to work in groups
- Close to many resources
- A safe, non-distracting place to study
- Access to collections on reserve
- Facilities: computing software, copying, printing, and scanning

- A great atmosphere” (Orsdel, 2010).

It is obvious that most of the aforementioned points are related to a sociable environment as a daily need for today’s people. “Place making is not just about the relationship of people to their place; it also creates relationships among people in places” (Schneekloth & Shibley, 1995), libraries are the clearest examples of this need for socializing.

Similarly, Lippincott (2010) states that students’ working in groups as well as participating in video chats and instant messages in libraries will create an integrated digital environment, which is most desired by students. In other words, students become members of higher communities when they go to libraries, and that is why students feel that the library is an important and essential place to go (Lippincott, 2010).

3.2.2 Smart Spaces for All

Technology has become a prominent feature of this era. This transformation caused the appearance of a new generation with a different perception towards life. Gardner and Eng (2005) call this generation; the Internet generation, the echo-boom generation, the digital generation or Millennials. Also Gardner and Eng (2005) portrayed Millennials as a more academically ambitious generation, and that is why they visit libraries more, in order to learn more. From this sense, libraries tended to change forwarding to the new area of technology and new generation (Gardner & Eng, 2005).

During the late twentieth century, dramatic changes occurred in the globe. Even though, the Internet seems to be a basic revolution in libraries’ physical existence,

library buildings have not lost their importance. The function of designing a space around housed books on shelves has changed to another one, based on new human needs and promoting social activities, leisure and group works. Students on university campuses, most of time, do their academic tasks collaboratively with their friends through digital and technological content (Peterson, 2013).

With the advent and advancement of internet methods, libraries must be on the ever cutting edge to reach out to their patrons. It is essential to make sure that the virtual library is equitable to the same physical library and its contents are available to all. This can be achieved through the provision of electronic resources in different formats as CDs, DVDs and also some spaces such as Audio-Rooms with every technological requirement for those interested in audio libraries. In contemporary libraries, all services related to readers' demands should be present, and when users require sources, it should be possible to communicate by email as soon as possible (King, n.d), (Gupta, 2010).

Interactive technological aspects like, internet service inside libraries, active e-book facility, electronically source searching, computer centre, storage of data and resources on CDs or DVDs, are essentials for this century. Also, libraries group linkage provides students the chance to benefit from other university libraries.

3.2.3 Inclusiveness

The entrance of the library is the first step to entice students inside the library. It has to be at the right place, with primary services such as the reception for answering the students' general questions. It should have large screens, which show the plans of the library to guide the students to their exact destination (Abbasi et al., 2013).

It is essential that to be easy reaching the library from the outside, as well as the resources in the library inside “Having just an accessible entrance will not make the service accessible” (Gupta, 2010). For instance, a person who has vision losses should be able to use the library without difficulty. Students with hearing disability should be able to obtain all information that they need. Also, an accessible entrance in case of emergency is important for students with disabilities.

For that, library should be a place to be used by all and be accessible to use. Also both hard copy and digital copy of sources should be provided, according to physical and virtual spaces for the same library in easiest way for all students, regardless of their age, situation, and gender.

Nowadays and in 21st century, technology is one of the most significant features of libraries that attract students. The collaborative library should have access to other university libraries, so that the students as well can use them easily (Loftus & Fox, 2012).

3.2.4 Human Comfort Issues

A definition of the word comfort is “to cause (someone) to feel less worried, upset, frightened, etc.” (URL25). Ergonomic furniture has impact on human comfort in libraries, regarding to distraction issues and the time they may spend in library. No doubt, variety in sitting chairs, furniture according to space demands, colour, and type of furniture are responsible for providing this comfortable environment. “A mix of desk-style furniture and soft, comfortable seating is desirable. Some information commons include diner-style booths for small groups or areas with beanbag chairs for informal seating” (Lippincott, 2006).

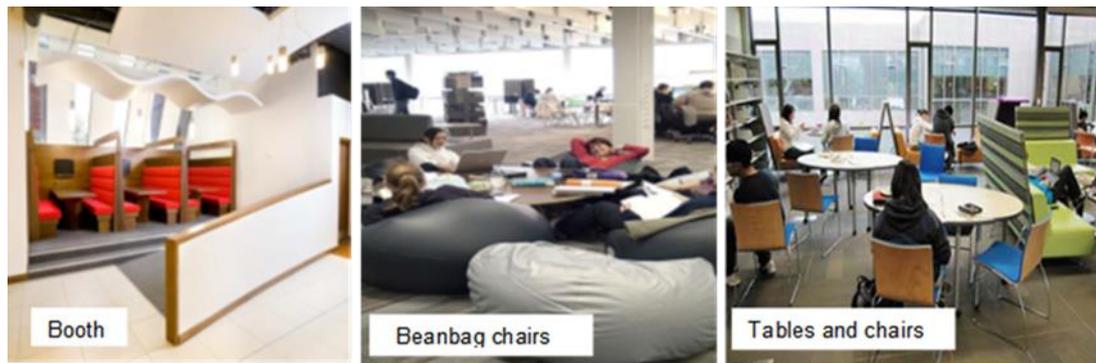


Figure17: Various types of seating, Iowa State University IRB (Peterson, 2013)

Both natural sunlight and artificial lighting have dramatic influences on human perception and performance inside library spaces. Mohanty (2002) discusses the role of lighting in interior design of university libraries, and he states that “Study areas should avoid dramatic lighting; an even lighting pattern is the best to minimize glare, which may distract some readers” (Mohanty, 2002).

Colour is considered as one of the most effective variables, which gives human different perceptions. Every colour has a different influence on human senses and psychological well- being. Colours have the ability to attract students to university libraries. From this view, it is better not to use a lot of different colours, thus using dim green and blue colour promote a proper space to study and are suitable colours for the interior space of university libraries (Mohanty, 2002).

Another point that could be mentioned is integrating the natural landscape into library spaces. No one could deny the positive impact of nature on human perception, it could provide readers with a more welcoming and fascinating environment, which will increase the brain performance to accept information (Ugwuanyi, et al, 2011).



Figure 18: Shenzhen Baoan, the library interior landscape (URL 18)

Thermal comfort, thermal stress and thermal discomfort will be the most common vocabulary, which are widely used to describe temperature in spaces. Thermal comfort means humans will not perceive temperature as a problem because he/she does not feel too cold or too hot. As for thermal stress, it represents a situation where human beings need drastic protection against temperature and may need medication to get rid of the situation. The third concept, thermal discomfort, is situated between the two mentioned ones, where people feel fatigue and lose concentration because of inadequate temperature. This issue has a significant impact on readers' performance in libraries. A space will become most welcoming when temperature is regulated at the level of human body comfort.

“Acoustics is the branch of physics that deals with the production, control, transmission, reception, and effects of sound. Acoustical design is the planning, shaping, finishing, and furnishing of an enclosed space to establish an acoustic environment necessary for the distinct hearing of speech or musical sounds” (Binggeli, 2003). Calmness of spaces, which are free of echo, gives human beings a comfortable sense of space. Acoustical materials and colours should be selected in a way which create no drawbacks to human health.

All the above mentioned considerations are related to the physical environment to bring back students and encourage them to use the physical environment of academic libraries. From this point of view, for the transformation of academic libraries into social learning centres, the consideration of the social environment is crucial and holistic approaches should be developed.

Another important consideration is 'elegance'. Madni (2012) defines elegance as "... a term frequently associated with aesthetics in design. It typically connotes simplicity, beauty, and grace." Elegance has its unique importance in the design of libraries in a way that gives mental rest and cultivates mindfulness. Also it allows the users to easily navigate their way to find their needs inside libraries. Elegance has the power of engaging between functional aspects and spiritual needs in spaces and leads to a creative environment. Diffusing daylight and artificial light across the spaces, views of the spaces, colour, interacting nature with the spaces and materials used inside are important points to have elegant spaces. Elegance despite its simplicity outputs a rich environment, which provides a welcoming and pleasant atmosphere in libraries (URL 4).

Helsinki University Main Library in Finland, which was redesigned in 2012 for a design competition, is considered as elegance based design especially in terms of its interior spaces. In redesigning this library the cityscape was taken into consideration in a way that the focus point was on having most views towards the city sights. The designers provided a series of openings in the ceiling along the street front. Also very huge arched windows were designed to make sure that the outside environment interacts with the interior spaces. The materials used, the design and the height of the building as well as the façade of the library are all selected to make a unique

engagement between interior and exterior of the building regarding the surrounding environment.

The function of the library is very clear and it has flexible floor levels. It is easy for all to find all necessary functional zones and spaces with a clear way of finding elements from the obvious walkways and conspicuous staircases. Colour has a significant role in defining different spaces also creating a contrast with the light in interiors to create different and pleasurable senses (URL 29).

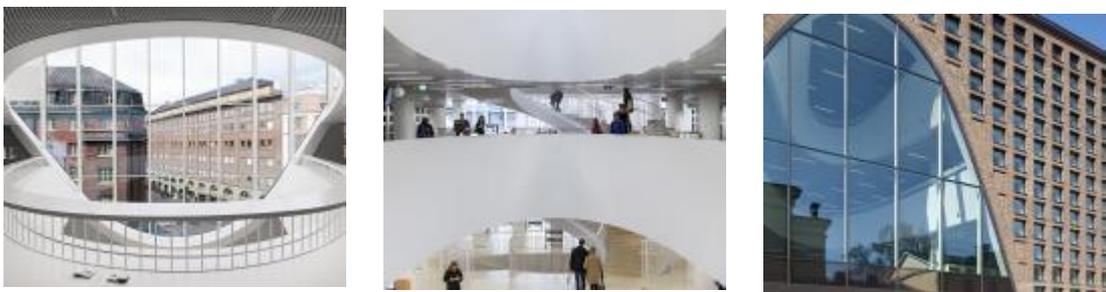


Figure 19: Helsinki University Main Library in Finland (URL 29)

3.3 Social Environment Considerations

Certainly, all the changes in interior spaces of physical environments of the academic libraries seek to transform libraries into social learning spaces. This gives new life, meaning, and function to these social learning centres, whether the academic libraries are collaborative and innovative. These specifics have become turning points from previous libraries to 21st century social learning spaces as illustrated below:

3.3.1 Collaboration

The interior qualities of the library can contribute to academic success and provide students with an unparalleled study environment that supports peer collaboration and scholastic achievement (Gardner & Eng, 2005).

Library facilities are moving away from the traditional hierarchy of forms to hierarchy of functions, as more individualised and modified libraries become more common, offering personalised services to specific target groups of users.



Figure 20: Collaborative Academic Libraries (URL18)

The factors that help collaboration, can be observed through the following points:

1. Needs and Benefits: what really benefits students and what are rare and cannot be obtained outside should be focused on, and for that students' opinions are significant for the consideration of both materials and space needs.
2. Attitude: Positive attitudes toward the collaborative effort and the associated organizational change.
3. Communication: Frequent, open communication is essential to the continuing success of a collaborative relationship
4. Vision, mission, goals: the best can be generated by beginning with an inclusive exercise to articulate vision and mission and to establish goals. (Shepherd, 2004)

A collaborative library should allow individuals in its family campus to use all contexts that exist. It has benefit for all the participants; also well-defined relationships could be seen.

The design should serve all individuals on a university campus, regardless of their language, age, nationality, gender...etc. Having a written policy guide to describe the duties and rights of students is one of the important issues as well. Accessibility is one of the library necessities that could be achieved in collaborative libraries obviously.

Collaborative library is organized according to its readers' needs. Any information, any resources, and any spaces should be accessed easily. "...Collaboration in Libraries and Learning Environments is a strongly recommended read for library science collections, not to be missed" (Peterson, 2014).

3.3.2 Creativity

In this era, academic libraries can be seen as laboratories that can inspire and motivate creativity within the learned community. Many academic libraries are facing the constant challenge of having to prove their value (Lotts, 2015).



Figure 21: Innovative Academic Libraries (URL18)

Creativity is defined as primary for the organization of a new product, a new service, a new technology, or a new administrative practice; or a significant improvement to an existing product, service, technology, or administrative practice (Daft, 1978).

Libraries could be used to create events as a means to spread the importance of learning and the power that libraries bring to the academic process. As Erin Fisher (who is an American actress) states, “Making provides opportunities for people to learn with their hands” and those are aids that are valid when conducting scholarly research in an academic library (Lotts, 2015).

Technology has the first preference to engage university students to create creativity in their academic libraries. Technology has changed the expectations of library patrons. Today, students are expecting to be able to access information from wherever they are to their university library. Nowadays, libraries have recovered and are thriving in a technology fuelled world. Innovation, creativity, and re-imagining libraries are interacting with new technologies in creating dynamic community centres filled with life. In the past, libraries were a house of dusty books and card files, now they are centres of creativity, freedom, communication, and advancement (Rendon, 2015).

As a result of the impact of information and communication technology, the role of the library has changed in terms of services and information. “Library’s role has been changed from information provider to facilitator of information, transition from print to electronic media, users have become ‘Active Users’ than ‘Passive Users’. Emphasis in the libraries has been on ‘access’ instead of ‘acquisition’, ‘team work’ rather than ‘individual contribution’, solitary environment to networked environment” (Damanpour, 1996).

Rogers (2003) defines creativity in academic libraries as “as a stable system of individuals who work together to achieve common goals through a hierarchy of ranks and a division of labour” (Rogers, 2003).

Innovation within an academic library presents an interesting challenge. Professional averages, symbolic objects, the physical building and the book and the focus on process all contribute to the inertia inherent in the traditional structure of the academic library (Jantz, 2011).

Thus the university libraries have a big concern and a crucial role not only in determining students’ education and research, but also in supplying a multiplicity of services in different fields.

The social networking in library services and applications may bring change in the relationship between users and transform libraries by improving the involvement of users in the activities and services in a university library. Technologies (computers, networks, internet and social media) have this role in the avant-garde thinking contained by university libraries and assist today’s libraries which will further greatly enhance their capabilities on condition that academic service and researching out the users of university library (Paradas, 2016) .

Academic libraries are places which have the potential for innovating new ideas depending on the information sources which are available for students who have creative imagination. This place becomes a medium for sharing and inventing unique concepts. That is why academic libraries are viewed as innovative places (Colegrove, 2013).



Figure 22: Innovative Academic Libraries (URL19)

From all of the above-mentioned points of view, there are several criteria for evaluating academic libraries used by researchers to determine gaps in an academic environment. Many interior architects involved in research devised numerous criteria for the evaluation of interior spaces of their purposed buildings. This research also has its own criteria. For the purpose of analysing the validity of these criteria, EMU main library is used. The criteria (characteristics a contemporary academic library should have) are:

- Spaces for all;
- Smart spaces;
- Spaces for socialization;
- A welcoming entrance;
- Easy access and way-finding;
- Well-solved human comfort issues.

The next chapter focuses on how these criteria apply to the EMU library.

Chapter 4

CASE STUDY: ÖZAY ORAL LIBRARY

This chapter presents the research case study research design, which is used in this study in detail. The first section presents an overall view of what is done in this research. The second section shows the context of this study. The third section illustrates the data sources that are used in this study. The fourth section defines the data collection instruments and data analysis procedures. Finally, the results are given.

4.1 Overall Design of the Study

The main aim of this case study is to evaluate the spaces of Özay Oral Library in EMU campus in order to develop an in-depth analysis of the case within the time and activity framework it is bounded by at this time interval. By doing so, it aims to determine the shortages of this library, and hence a list of practical suggestions for its renovation in order to be able to help its transformation into a contemporary social learning space.

As research design, a mixed methods approach is used, where both qualitative and quantitative approaches are incorporated. The study integrates two different forms of data in order to provide a more complete understanding of the research problem. These are data collected from on-site observations done by the researcher (qualitative), informal interviews with special needs students (qualitative) and information gathered from students obtained through a structured questionnaire

survey (quantitative). The quantitative data was used to check the validity of the qualitative data.

Prior to collecting the two forms of data, the researcher scanned relevant documents in literature. This process helped the researcher identify the key-issues needed to evaluate an academic library case through the contemporary characteristics and practical aspects as covered in literature related to libraries in general. Parallel to this, existing literature related to the human interface (e.g., universal design and environmental psychology) and sustainability issues in the field of interior design and architecture helped the researcher to define another set of key-terms.

The figure below provides a schematic explanation of the research design and its process.

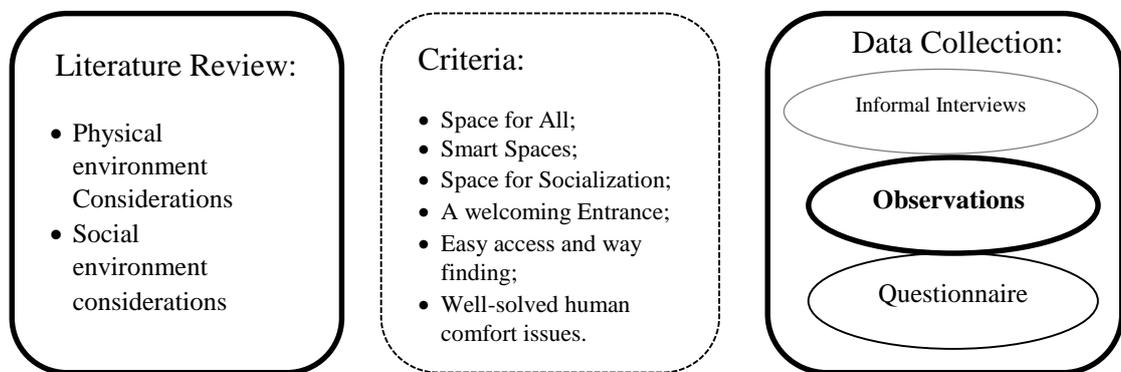


Figure 23: Working process in the case study

4.2 Özay Oral Library

In 1979, the 'Institute of Higher Technology' was established in Famagusta, and the Departments of Civil Engineering, Electrical Engineering, and Mechanical Engineering were opened with 3-years programs, and there were only 105 students.

In that time, 'technician-engineer' diploma was given to successful students. In 1986, this institute was transformed to university under named EMU (URL 24).

From the beginning of the establishment of the academic areas of EMU, the library was organized in one room. After transforming institute of higher technology to EMU, the library was transferred to the top floor of the English Preparatory School. In that time, it covered an area of 790m² with 10000 books.

In 1992, the project for a modern library with all the technological facilities (of those times) was completed and the construction process had started. The library was transferred to its new building in 1993, on an area of 6,600 m². Now, it has above 150,000 books, which are divided into different parts within four floors. In the ground floor, there is an entrance (security), audio-visual rooms, a library auditorium, and a periodical section. In the first floor, there is a circulation desk for borrowing books, a photocopy room, a cataloguing department, acquisition, a computer department, a secretary, an administrative officer, a head of technical services and the library director. In the second floor, there is a section with reference resources, reserve books and thesis collection, a general book collection, interlibrary loan, Cyprus Corner and Cyprus newspapers archive. In the last floor of this building, there is Nevzat Karagil Collection, the general book collection, and a European information centre. The reading areas of this library are located in the second and third floors.



Figure 24: Main library of Eastern Mediterranean University (URL 19)

After collecting data from literature, this study has created its own criteria for the evaluation the library spaces. Based on these criteria, on-site observations were done by the researcher between March/2015 and December/2015 by visiting the library. For each criteria or critical issue, that had an importance for the researcher, some photos were taken. The informal interviews with the special needs students were done in May 2015, outside the library. Due to problems of accessibility, it was difficult to find these students inside the library. So, the researcher found them through personal relations and did the interviews with them outside the library premises.

They were asked three very general questions, through which they could express their needs and the difficulties they had if they wanted to use the library. These three questions were: “What are your experiences related to using EMU main library?”, “If you need books in this library how can you get them?”, “What is your opinion about the reading areas in this library?”.

In December 2015, a structured questionnaire with 40 questions (close-ended and open-ended), available in both English and Turkish Languages was distributed to the

students who used the library, during 5 days. 30 questionnaires were distributed directly in the library. 28 students answered the questionnaire. Their answers and their comments have an important contribution in this research.

Between December 2015 and January 2016, the same prepared questionnaire was given to the students at Faculty of Architecture too. It was distributed to the third and fourth year design studio students. It was assumed that, these students have already absolved the course ARCH/INAR 211, which is a course related to the human comfort issues in architectural space.

The Faculty of Architecture has two departments. At the Department of Architecture (DA from here on), 206 questionnaires were distributed to the students in architectural design studios ARCH 391, ARCH 392, and ARCH 491 with the help of the course assistants. 116 questionnaires were answered and returned. This was an important voluntary participation. It was also very positive to discover that some of the students even wrote some very valuable comments. Under the Department of Interior Architecture (DIA from hereon), two undergraduate programs are run. One program is conducted in English language (DIA-E(s) from here on), whereas the other one is conducted in Turkish Language (DIA-T(s) from hereon). At the moment, DIA-E(s) has far less students than DIA-T(s). 35 questionnaires were distributed in DIA-E(s) studios (INAR 292-391, INAR 392-491, and INAR 492) again with the help of course assistants. 29 questionnaires came back answered. In DIA-T(s), 91 questionnaires were given to students, again in their design studios (ITAS 301, ITAS 302, ITAS 401, and ITAS 402). 63 students voluntarily took part and answered the questionnaire.

Table 1: The questionnaires' distribution numbers

	Distributed Questionnaires	Return-Back Questionnaires	Percentage of Answered Questionnaires
ARCH. Dpt.	206	116	56.31%
INAR. Dpt.	35	29	85.86%
ITAS. Dpt.	91	63	69.23%
Library	30	28	93.34%
Total	362	236	65.19%

In general, there were 146 males and 90 females, who participated in this research. 226 of the respondents were undergraduate students, 9 master students and only 1 PhD student.

Table 2: The summary of gender and education level of participants

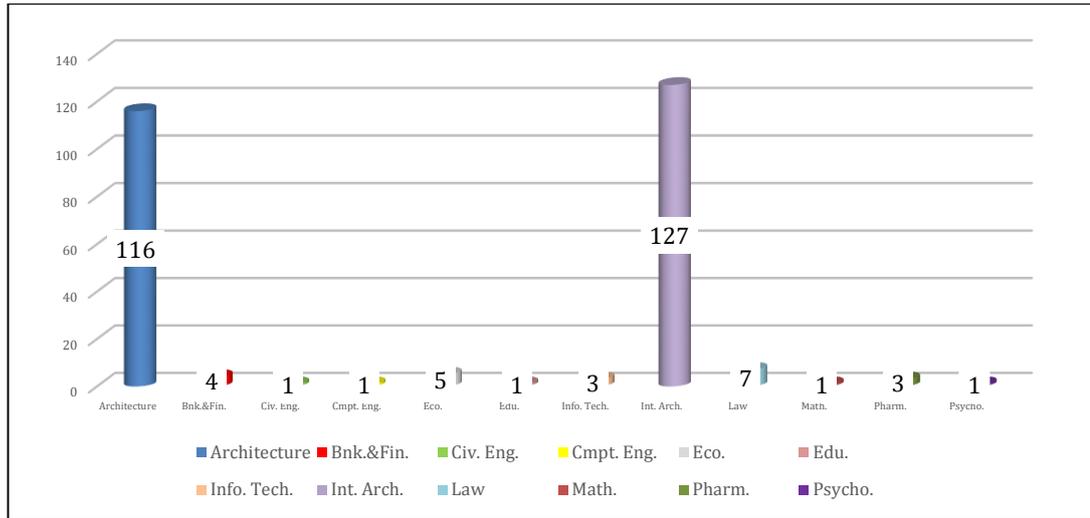
	Male	Female	Under Graduate	Master	PhD
Participants	146	90	226	9	1

In total, there were students from 18 different countries around the world, who participated in this study. Table 4 below shows the different nationalities of these students.

Table 3: Nationality of the Participants

Nationality	Number of Participants
Eritrean	1
Iranian	30
Iraqi	10
Kazak	53
Kenyan	3
Kosovar	1
Lebanese	8
Moroccan	1
Nigerian	31
Pakistani	2
Palestinian	7
Russian	1
Sudanese	5
Syrian	17
Tunisian	1
TRNC	27
Turkish	90
Zimbabwean	3

The students were from 12 different departments: Architecture (116), Banking and Finance (4), Civil Engineering (1), Computer Engineering (1), Economics (5), Education (1), Information Technology (3), Interior Architecture (127), Law (7), Mathematics (1), Pharmacy (3), and Psychology (1).



Graph 1: Participants' departments

After collecting the data through the questionnaire, the results were put in tables and graphs in Microsoft Excel Program to provide a better presentation. These quantitative numeric results, as well as the results of the qualitative observations are given below.

4.3 Data Analysis

The data (obtained from the observations of the library interiors and student opinions) was analysed, with respect to the main aims of this study. The informal interview results were used to shape the conceptual framework for the observations and the student questionnaire. Hence, they are inherent in the results of the study in a hidden way.

After the informal interviews and as previously mentioned, the researcher collected the data during 10 months at several different times, mainly through observations and then through the questionnaire. These observations were grouped according to the criteria of this research. One by one the results based on the analysis of these criteria are presented below. For each criteria, firstly the observation results are presented, and following this, the student opinions from the questionnaire are given. In this

way, the numeric data are used to check the validity of the observations. The scheme below in figure (24), illustrates the inter-relations between these three forms of results.

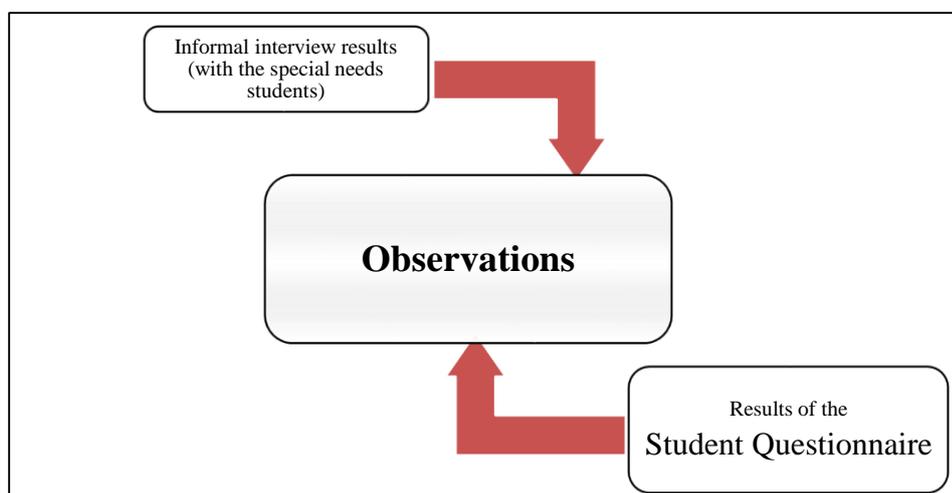


Figure 25: The inter-relations between the three forms of results

4.3.1 Spaces for All

According to literature and previous research, one of the most important characteristics that came to the front was that, the contemporary academic library spaces should be spaces for all. In other words, they should be truly inclusive, breaking down all social barriers (bridging community divides) and engaging. Having these in mind, the physical spaces and the virtual library of EMU were investigated.

Observation Results:

To understand the students' degree of engagement with the EMU main library, the researcher firstly, set out to find out more about the frequency the books were borrowed by the students. Because, according to the information provided by the vice-rector of the Eastern Mediterranean University, for 2015-16-fall semester,

there were around 20,000 enrolled students. This is a big number. There is no exact data available indicating how many students visit the university library during that semester. But, based on some information obtained from the information desk of the EMU main library, it was found out that, during that semester, 1057 times students borrowed some books. The maximum borrowing was done during midterm exam period. Only 13 times, books that belonged to the category of fine arts (architecture, painting, photography, music, etc.) were borrowed. (Information desk of EMU library, 2016) The library website mentions that this library contains above 150,000 books, out of which only 790 books are concerned to Fine Arts (architecture, painting, photography, music, etc.). When compared with the information obtained from the library website, it can be stated that these are very low numbers (almost only 5%), indicating that the library is not frequently visited place by the students (95% of the students are not borrowing any books).

According to literature, another characteristic of contemporary academic libraries is that, they are (instead of books etc.) more about people: How people use libraries to produce information together. This means, there is a need for spaces to support this kind of interaction and cooperation. During the dates when the observations were done, the library spaces were almost totally empty. It was not exam time but still, it was noted that the spaces were too empty. This emptiness is shown in Figure (24).



Figure 26: EMU library reading halls (photo by author)

Besides, during the observations, it was clear that there is no place appropriate for group work/study. The silence board was everywhere in the reading places. This can be seen in the picture below.



Figure27: EMU library reading places (photo by author)

Student Questionnaire Results:

In order to test the validity of these observations, some questions were asked to the students. Overall, there were eight questions were addressed to the students, in order to understand their engagement with the EMU main library. These were:

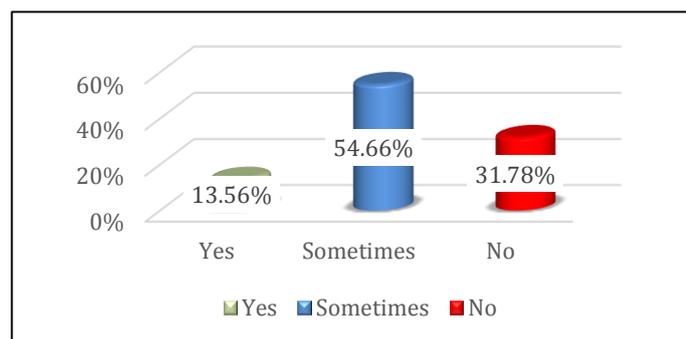
- 1. Do you use EMU main library?**
- 2. If you have not visited the main library in the last year, which of the following reasons describes why?**

3. Are you familiar with the EMU library website?
4. Is it possible for a student to use the library website to search effectively with little or no prior knowledge?
5. Does learning at your department involve group work?
6. What type of study do you prefer (individual or group work)?
7. How frequently do you use EMU main library?
8. If you use the library every week, how many hours per week do you approximately spend in the library?

All the results to these questions are presented below, one by one, in graphic form.

1. Do you use EMU main library?

According to the results, out of 236 students, 161 students mentioned that they use the library. 13.56% of them said clearly “Yes”, 54.66% said “Sometimes” and 31.78% of the respondents said “No”.



Graph 2: Use of EMU main library

2. If you have not visited the main library in the last year, which of the following reasons describes why?

To this question, the students were free to choose more than one answer. The most striking result to this question was that; 118 of the participants choose the option “H” (I don’t feel comfortable inside the library). The other interesting results were as follows: 36 of them chose the option “A” (I had not time), 96 chose answer “B” (It is far away from my department building), 101 selected answer “D” (There is no Wi-Fi to use Internet), 104 contributors chose answer “F” (There is no place to do group work), 85 selected answer “E” (There is no place to rest), only 8 students chose the answer “C” (The library hours are not convenient). Finally, just 2 of them picked the answer “G” (I get the information that I need from the EMU-main library website).

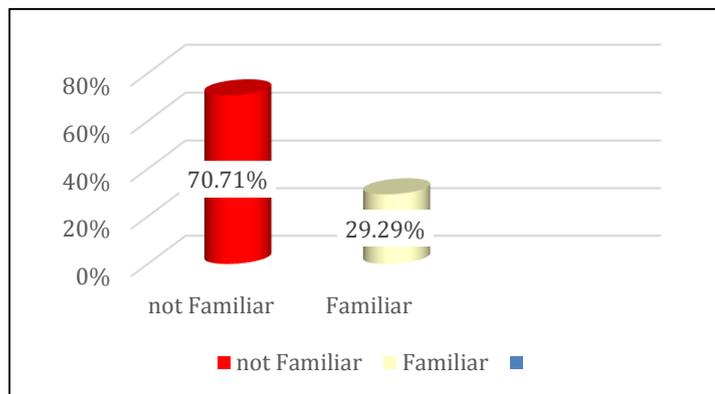
The table (4) below summarizes these results.

Table 4: The reasons students mentioned for not using Özay Oral library

The Choices	
A. I had no time.	36
B. It is far away from my department building.	96
C. The library hours are not convenient	8
D. There is no Wi-Fi to use Internet.	101
E. There is no place to rest.	85
F. There is no place to do group work.	104
G. I get the information that I need from the EMU-main library website.	2
H. I don’t feel comfortable inside the library.	118

3. “I am familiar with the EMU Library website.”

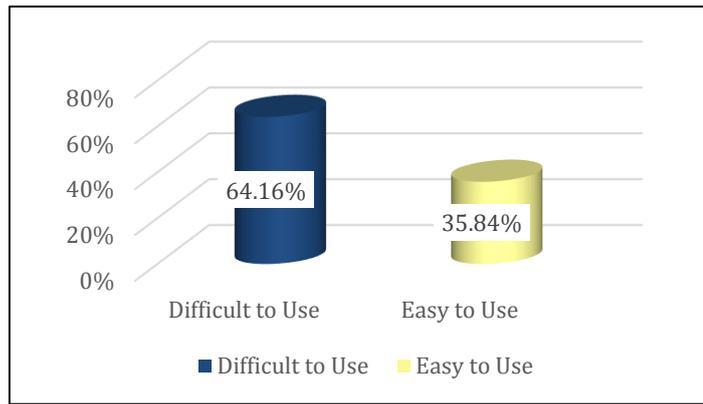
In this question, the students were asked about their experiences with the EMU library website, in order to understand the engagement of the students with the virtual library environment. 70.71% of them indicated that they were not familiar with the EMU website, and 29.29% said that they did had experience with the library website.



Graph 3: Students' familiarity with virtual library

4. “I think, a student can use the Library website to search effectively with little or no prior knowledge.”

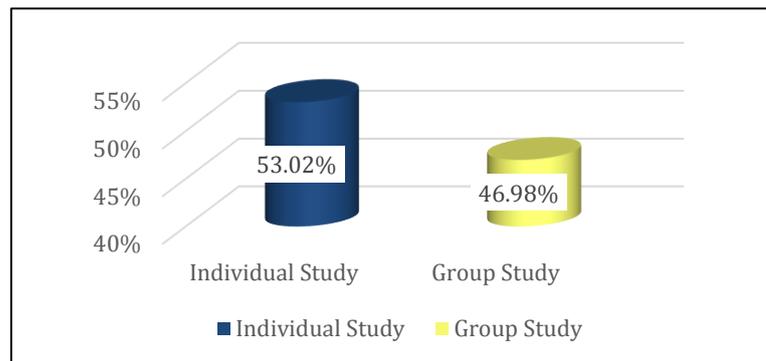
To this question, 64.16% of the respondents answered saying that ‘it is not easy to use the virtual library of the EMU Main-library’. On the other hand, 35.84% of the users of this library believed that the EMU virtual library is easy to use with a little or no prior knowledge.



Graph 4: Easy and difficulty level of virtual library by students

5. “Learning at my department requires group work.”

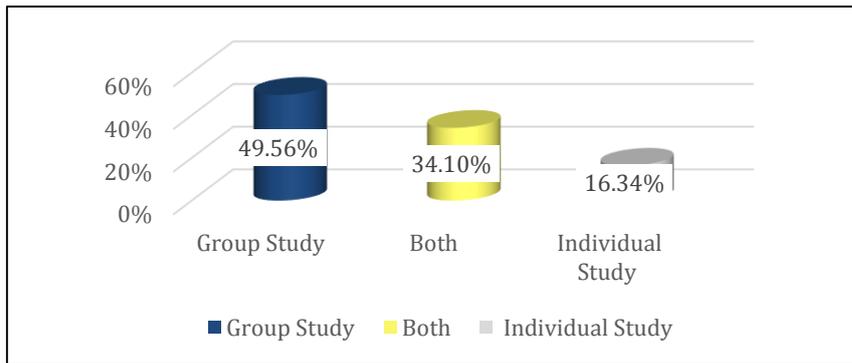
As a response to this question, 53.02% of the participants indicated that, they their study requires ‘individual study’, but 46.98% supposed that their study needs ‘group work’.



Graph 5: Individual and group study preference by students based on their departments

6. What type of the study do you prefer?

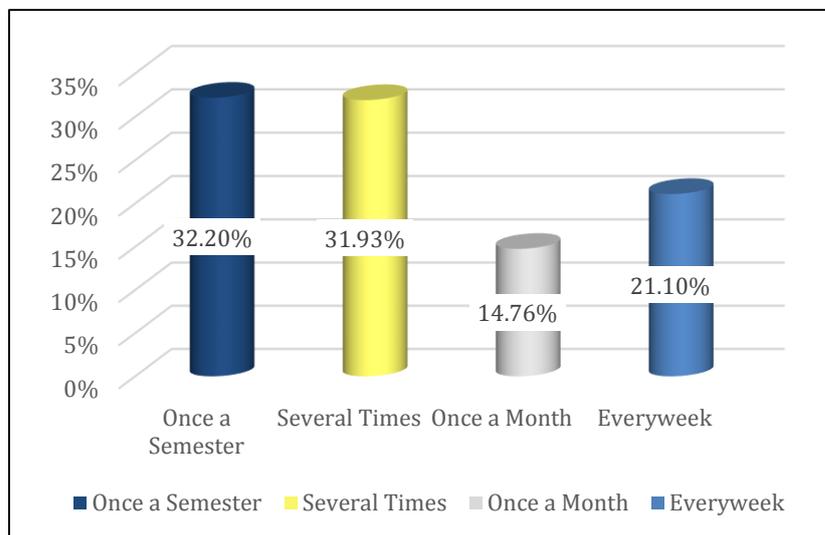
When asked, what type of study the students prefer themselves, the answers of the students were a little bit different. 49.56% of them mentioned that, they preferred group study/work. 34.10% of the respondents preferred both group study and individual study, and 16.34% preferred individual study.



Graph 6: Group study, Individual study and both

7. How frequently do you use the EMU Library?

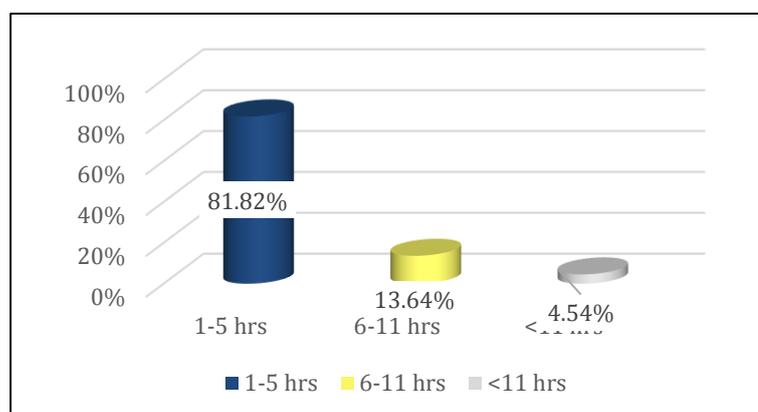
According to the library staff, the library spaces are most used by students during exam times and very little during other times. The student opinions to this matter revealed that 32.20% of the students use the library once a semester, 31.93% of them use the library several times a semester, 14.76% of the participants use the library once a month, and only 21.1% use the library regularly every week.



Graph 7: Frequency of using EMU main library in a semester

8. If you use the library every week, how many hours per week do you approximately spend in the library?

As an answer to this question, 81.82% of the contributors mentioned that they use the library every week for 1-5 hours, 13.64% of them use it for 6-11 hours, and only 4.54% use it for more than 11 hours.



Graph 8: Hours spending in the library by students

4.3.2 Smart Spaces

As it was revealed in literature, supplying up-to date technology, and mainly free Internet access in academic libraries is one of the basic requirements. Below, the research results related to this aspect are presented. As in part 4.3.1, firstly, the observation results are presented and then the student questionnaire results.

Observation Results:

According to observations made inside the library, it was noted that the usage of technology in general, is very limited. For example, even the Wi-Fi could not be opened easily. There is a password to join Internet. As a consequence, in the library, there were no students with their laptops. If there was strong free Internet connection, it could be assumed that the library would be full of students, who would independently study or just socialize in an unplugged way, yet still connected.

During the observations the researcher noted no capacity for the students to link into learning opportunities beyond the library premises. Similarly, there was no technology installed that can simulate real-world situations, to motivate students for alternative learning experineces. In a similar way, there were no technologically equipped studios, workshop areas or laboratories, where faculty staff can prepare audio-visiual course materials in cooperation with library staff, co-partners or students.

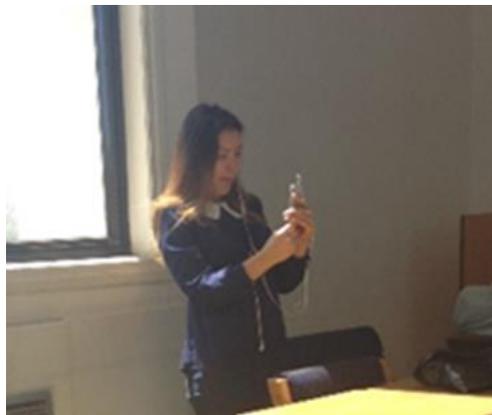


Figure 28: Internet connection problems in EMU library (photo by author)

In the library, there are hardcopy and softcopy handbooks as a guidance for using the library but there is no electronic guidance or computer system to give information about the spaces or the website of this library.

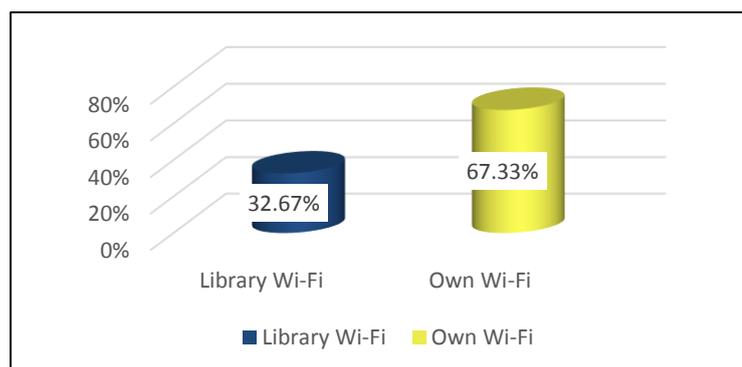


Figure 29: Usage guidance booklets of EMU library (photo by author)

Student Questionnaire Results:

Since, during the observations, there was no evidence of integrated up-to-date technology, the student questionnaire addressed the students only with two specific questions related to free Internet connectivity in EMU main library. The responses to these two questions are given below.

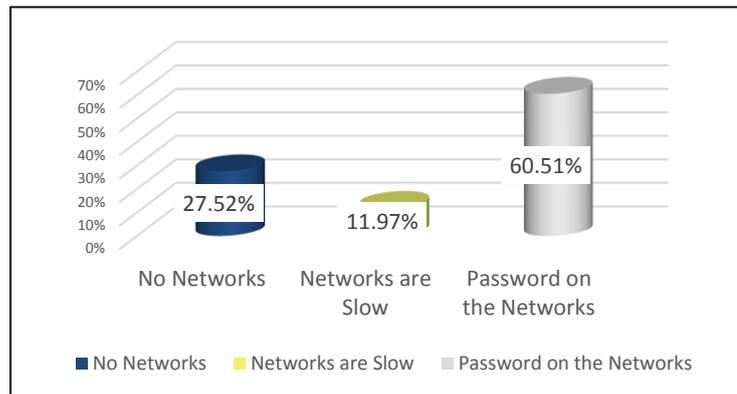
1. **“When I am in the EMU Library and I need to connect to Internet, I have to use my own Wi-Fi.”** 67.33% of the students agreed with the above statement. Only 32.67% of them stated that they use the library Wi-Fi.



Graph 9: Using students' Wi-Fi inside the library

▪ **According to you, what is the reason for not using the Wi-Fi of the library?**

27.52% of the students mentioned that the reason is the slowness of the network, 11.97% of them supposed that there is no network, and 60.51% of them said because there is a password to join the network.



Graph 10: Reasons of not using the library's network

4.3.3 Spaces for Socialization

According to the research findings based on literature, having spaces for group work and taking a rest is one of the significant characteristics of contemporary academic libraries. The researcher made observations related to this key issue in the library and consequently, the students were asked two questions. Both questions were related to having a cafeteria inside the library building.

Observation Results:

According to the results of observations, eating and drinking are forbidden inside. Students are allowed only to bring along their drinking water. There is no place, where the students can buy and drinks or snacks inside the library too. It was observed that, there are newly opened kiosks outside, in the close surroundings of the

library building. Also, the researcher noted that, there is no place for resting or any type of social interaction.



Figure 30: Outside Kiosks around EMU library (photo by author)

In the ground floor, some activity places (such as an audio-visual room, classical music room, auditorium and sea-shell collection exhibition) could be seen. During the observation no student was observed to be in the classical music room.

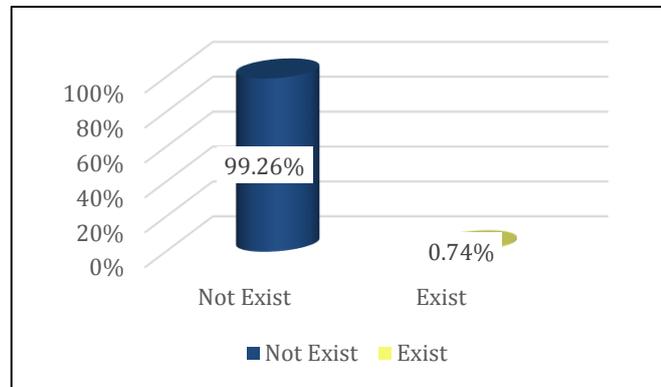


Figure 31: Some social and active sections in EMU main-library (URL41)

Student Questionnaire Results:

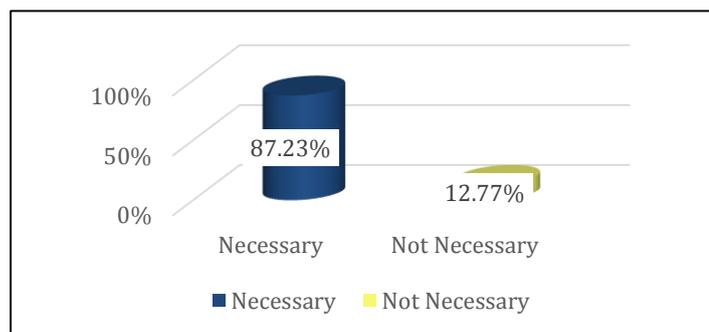
The student responses related to the questions about the need of a cafeteria, indicate that the students are not very happy with the current situation. The numeric data supporting this view is provided below.

- **“If I would like to drink something or have a snack, I have to go out of the library and find a place to get it.”** 99.26% of the participants confirmed that they have to go out, if they want to drink something or have a snack.



Graph 11: Cafeteria existing

- **“In my opinion, cafeteria is one of the essential places that should be in a 21.st century library.”** 87.23% of the respondents believed cafeteria is a necessary component of a 21st century academic library.



Graph 12: Necessity of Cafeteria

4.3.4 Welcoming Entrance

Entrances of the libraries have a significant role in providing a connection between the inside and outside. What is the entrance of EMU main library like? Below,

results derived from observations and student questionnaire try to answer this question.

Observation Results:

The entrance door of the library is relatively a narrow one. On the big white front façade, the door looks like a squeezed little black hole. From outside, one has no indication or idea of what is going on inside. In other words, it is not transparent and inviting at all. However, according to the researcher, the very good point about the entrance is the pleasant and smiling attitude of the staff. They are very kind, friendly and helped the researcher a lot during the observations.



Figure 32: EMU library main entrance and information boards (photo by author)

Once inside the building some other issues highlight several other deficiencies too. For example, the opening hours of the library are written on a very small table, printed on A4 paper with very small letter, which are almost un-readable. Besides, there is no comprehensive guidance in the entrance hall. The information about the floors and sections are written on an old-fashioned way on some boards.

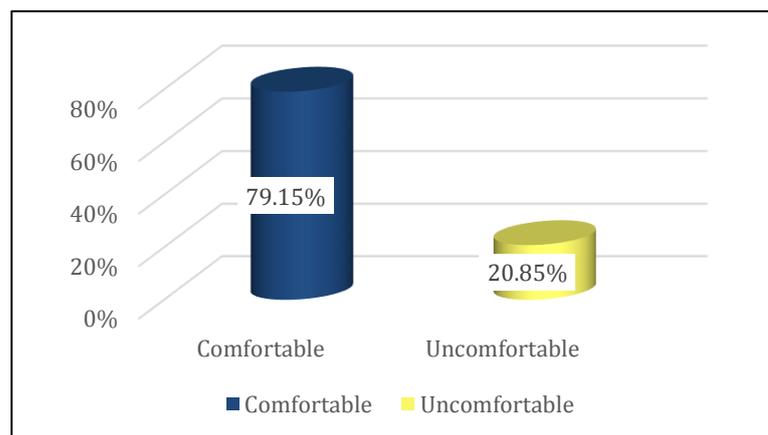
The security preventions in the entry give a negative impression too, making the researcher consider, how the students might be affected psychologically while passing through such an arrangement.



Figure 33: EMU library main entrance (photo by author)

Student Questionnaire Results:

- **Overall, in the entrance, the students feel comfortable with the reception staff of the EMU-Library.** According to the results, 79.15% of the respondents are comfortable with the staff and 20.85% are not comfortable.



Graph 13: students' feeling about the reception staff

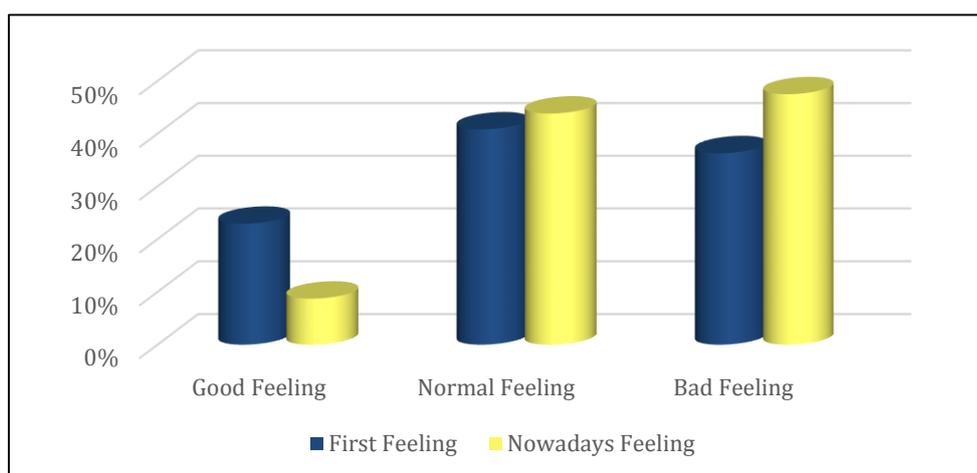
- **In the entrance of the EMU Library, there is an electronic guidance system, which directs the students very well towards the places they need to go to in**

the library. 94.95% of the students rejected to the statement posed to them. Only 5.05% accepted this idea.

- **What was your feeling the very first time you entered into the library?** 22.9% of the respondents stated that the first time they had good feeling, 40.81% had a normal feeling, and 36.29% of them had a bad feeling. Some of the participants commented on the entrance. One of them wrote “So depressed...I want to renew the Library” [sic].

After the above question, the students were asked:

- **And nowadays, what are your feelings when you enter into the library?** The answers the students gave to this question were much different. Only 8.71% of the students stated that nowadays as they enter into the library building, they have a good feeling, 43.81% has a normal feeling, and 47.48% of the users of this library have a bad feeling. The table below shows these numerical results side by side.



Graph 14: first time students' feeling and nowadays feeling in the reception

4.3.5 Easy Access and Way Finding

Finding access in an easy way to get to the library is also one of the crucial points for a contemporary library. Below, after the observations of the researcher, addressing these issues, student opinions are presented.

Observation Results:

This library seems not to be used enormously by the students in the university because of its location. For some departments (such as pharmacy, computer engineering etc.) the library is too far away.



Figure 34: Location of the library in EMU campus

On the other hand, it was observed that the main entrance to this library is not occupied with requirements for students with special needs. There is no ramp, and a person with a wheel chair cannot easily pass through the doors and the security equipment. The accessibility for special needs students is not considered in this library. In other words, they cannot reach the ground floor. Assuming that they manage to enter the library building and enjoy moving around the spaces in the ground floor, they have no idea about how to reach the other upper floors.



Figure 35: The main entrance of EMU main-library (photo by author)

Once inside the building, it was noticed that, the stairs are wide enough for two persons go up and down next to each other, but a third person would have a difficulty to fit in.



Figure 36: EMU main library main stairs (photo by author)

Regarding the movement around the building, it was noticed that the distance between the bookshelves wide enough for allowing two students pass through together at the same time.

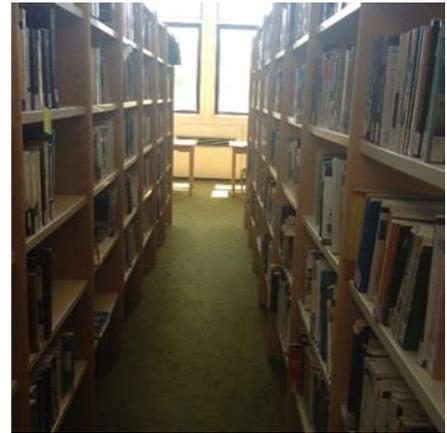


Figure 37: the bookshelves arrangement in EMU library (photo by author)

The observation results also revealed a fact that; it was not easy to find some service spaces located within the library. For instance, the researcher, even after many times of her observational visits to the library, still could not see/find the photocopy room.



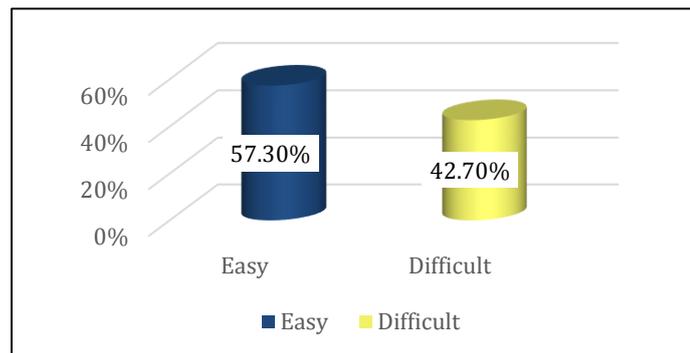
Figure 38: Photocopy Room of EMU library (photo by author)

During the observations, fire escape for this building could not be found for accessing at emergency time. One of the respondents wrote, “I think if there is fire... How I can escape?” [sic].

Student Questionnaire Results:

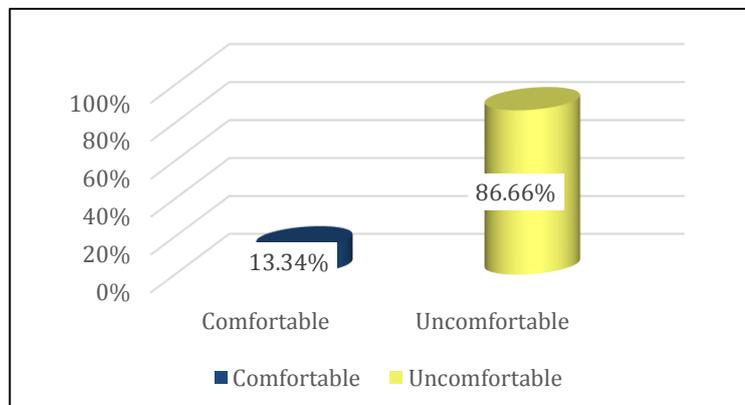
The student answers provided a realistic feedback upon the above-mentioned observations. They are summarized below.

- **“It is easy to get to EMU Library.”** 57.30% of respondents believed that it is easy to get to EMU library but 42.70% of the students thought that it is not easy.



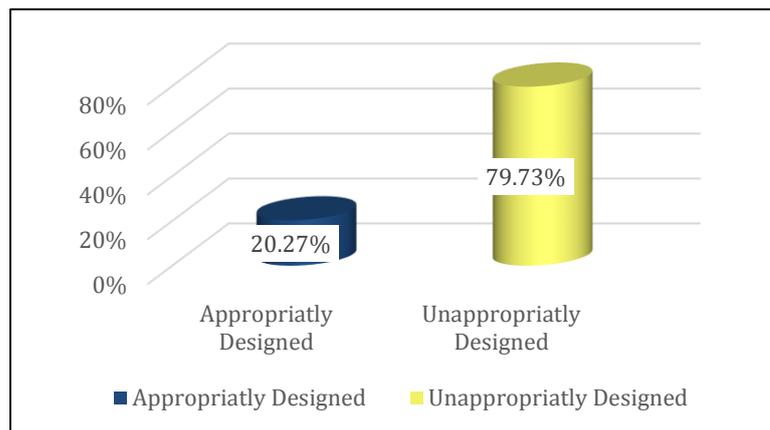
Graph 15: Easiness and difficulty to get to the library

- **“When I enter into the library, I feel comfortable going to the upper floors by climbing up the stairs.”** 86.66% of the students said that they do not feel comfortable regarding the vertical circulation in the library building, but 13.34% of them had no problems with it.



Graph 16: Accessibility inside the library

- **“The entrance is appropriately designed for the easy access of our friends with special needs (e.g. using a wheel chair).”** 79.73% of the students mentioned that the entrance is not appropriately designed for easy access for all. However, 20.27% of them believed that it is designed appropriately.



Graph 17: Evaluation of entrance according to special needs

Results of Students Informal Interviews:

As mentioned much earlier in the study, the informal interviews were done outside the library with three special needs students upon finding them through personal contacts. According to the views of these students, the following results were derived:

- The building is full of barriers (for not only disabled),
- Special needs students need assistance if they want to borrow a book,
- Principles of inclusivity are not applied in this library.

4.3.6 Well-Solved Human Comfort Issues

When considering well resolved human comfort issues in libraries, what is meant is that the interior spaces are attractive, welcoming, comfortable, having thermal, visual, vocal comfort, are ergonomic and have appropriate furniture. The researcher

investigated all these issues both during the observations and through the questionnaire. The key-criteria, which formed the basis of these, were:

- Visual Comfort - Colour (Two questions in the questionnaire)
- Visual Comfort – Light (Three questions in the questionnaire)
- Vocal Comfort - Acoustics (Three questions in the questionnaire)
- Thermal Comfort - Heating and Cooling (Two questions in the questionnaire)
- Ergonomics – Furniture (Three questions in the questionnaire)
- Contemporary and Inclusive Wet Spaces (Two questions in the questionnaire).

As in previous criteria, the results of the observations and the student questionnaire are provided below. As earlier, firstly the results of the observations are presented and then the results from the student questionnaire.

Observation Results

- **Colour:** It was observed that, the gloomy green and brown natural wood colours, which were used, are appropriate for the purpose of a library, because natural colours are the preferred colours to be used in reading areas in university libraries. It seemed that the colour of this library is adequate.



Figure 39: Colour in interior spaces of EMU library (photo by author)

- **Light (Natural Daylight):** It was observed that, the windows of the library had glasses in a brownish colour. This helped to block the entrance of direct sunlight to the library interiors, resulting in a comfortable atmosphere. The students seemed pleased by this atmosphere.



Figure 40: Brown glass of windows and skylight in EMU library (photo by author)

- **Lighting Design:** For artificial lighting, it was noticed that fluorescent lamps are used in most spaces (almost everywhere), which created a glare on the tables and other furniture in the library.
- **Vocal Comfort:** As vocal comfort in this library, the researcher tried to observe the acoustical issues. Regarding the doors, wall materials and the roof, no special material or acoustical panels could be observed. However, it can be stated that, the carpeted floor was influential in absorbing unwanted sounds.



Figure 41: Heating and cooling system makes noise in EMU library (photo by author)

Interestingly, the researcher observed that, there was a room in the library, which had a sign written on its door, saying “Very Silent Study Room”. But upon entering the room, paradoxically, it was registered that the air-condition equipment itself was very noisy.

It was observed that, outside the building, but very close, there is an electric generator, which is working as a noise source in this area.



Figure 42: Outdoor electric generator making noise, near reading places (photo by author)

- **Heating and cooling system:** The library has a central heating and cooling system.



Figure 43: Central heating and cooling system in EMU library (photo by author)

- **Acoustics:** Regarding to acoustics, it can be said that the main source of noise was the heating and cooling system in the library building interiors. Also it was clearly seen that most of the air ducts had fungi on its surroundings.



Figure 44: One of the air-ducts in EMU library (photo by author)

- **Ergonomics:** Furniture in this library did not seem very ergonomic. The chairs were not movable and modern. The researcher tested them. They were very heavy and not very comfortable.

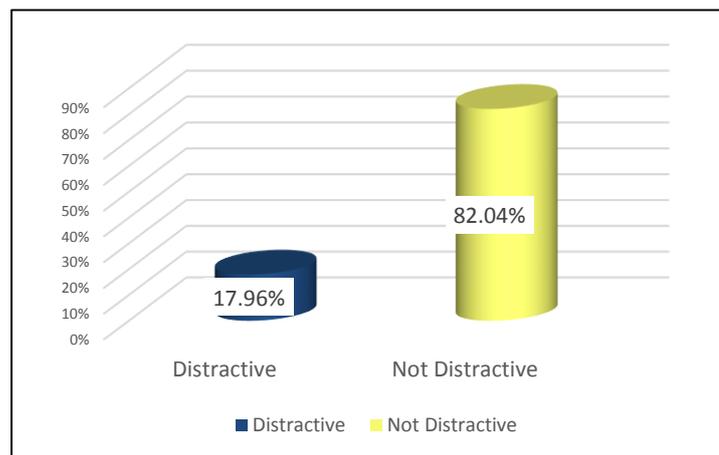


Figure 45: EMU Library chairs in reading places (photo by author)

Students Questionnaire Results:

Below are the three visual comfort related questions:

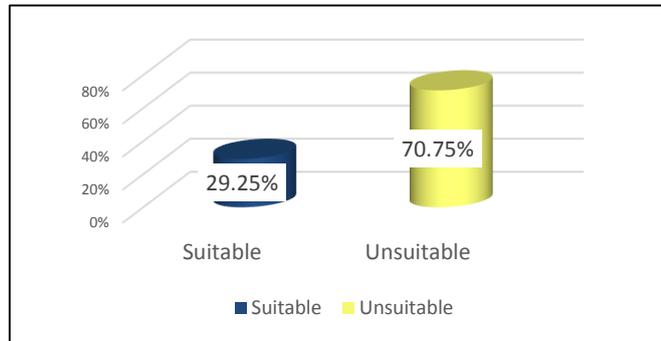
- **“When I study in this library, I feel distracted by the colour of the walls, carpets, floors, and furniture around me.”** 82.04% of the students answered that the colour is not distracting, but 17.96% thought that it is distracting.



Graph 18: Effects of the physical environment inside the library

- **“The colour schemes used in this library are very suitable for reading or studying.”** 70.75% of the participants responded in a way signaling that they did

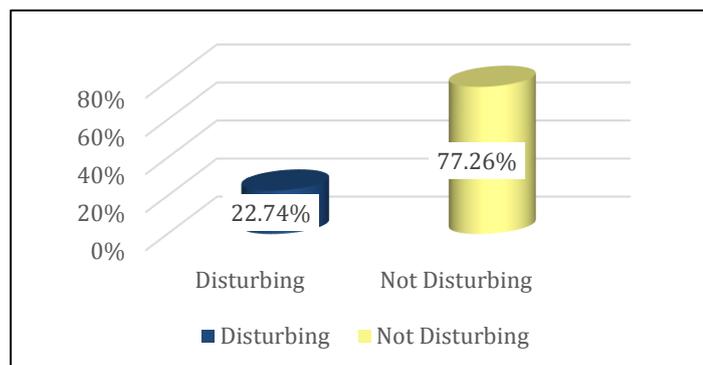
not like the color schemes in the library interiors. 29.25% of them were all right with it.



Graph 19: Colour for interiors of the library

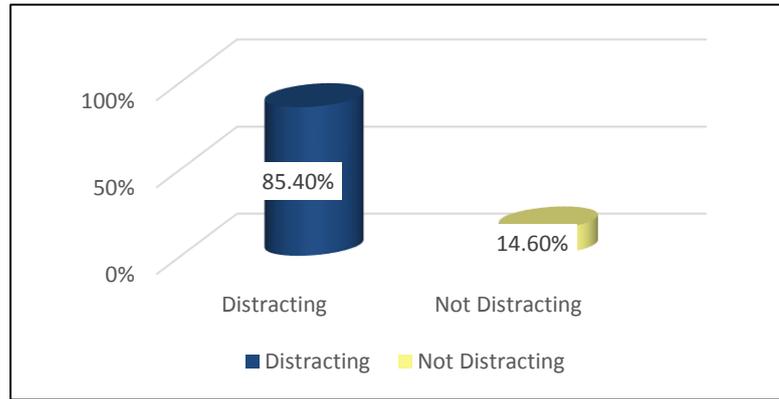
Three questions related to “light” and their answers are presented below:

- **“The degree of direct sunlight inside the library is not disturbing.”** 22.74% of the students believed that it direct sunlight is disturbing, but 77.26% of the contributors thought that the direct sunlight is not disturbing.



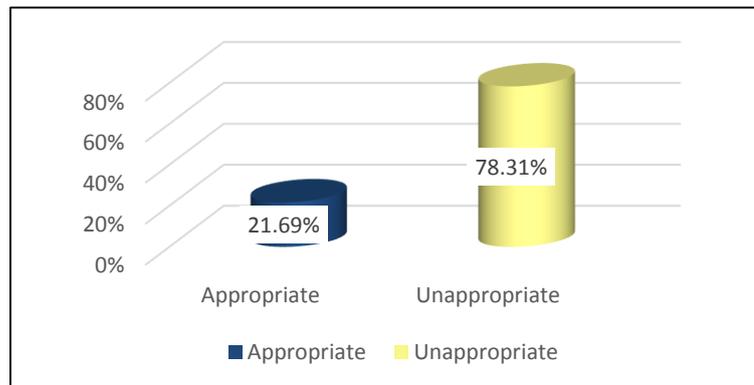
Graph 20: Influences of direct sunlight inside the library

- **“The florescent lamps in the library are not distracting me.”** 85.40% of the students who participated in the questionnaire answered that they are distracting, but 14.60% believed that the fluorescents are not distracting.



Graph 21: Florescent lighting

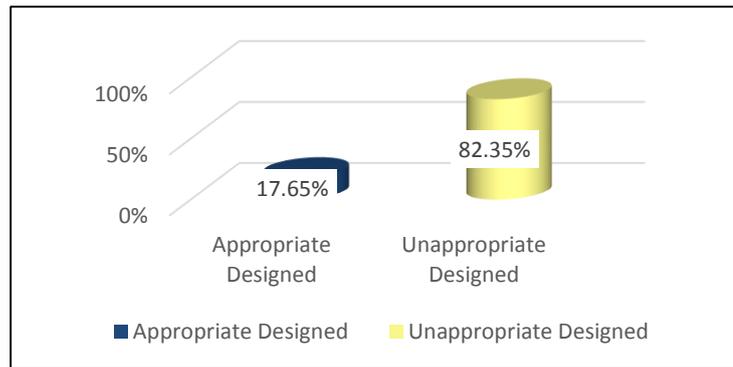
- **“The design of the lighting system in the library is very inspiring and appropriate for today’s students’ needs.”** Only 21.69% of the students agreed with the above statement. 78.31% of the contributors confirmed that this library does not have an appropriate lighting design.



Graph 22: Design of lighting system in the library

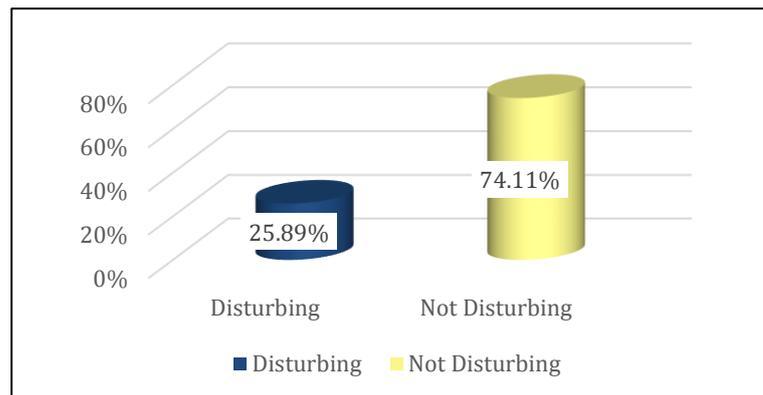
Below three questions and their results related to vocal comfort can be found.

- **“In different spaces, there are appropriately designed acoustic panels, which add extra quality to these interiors?”** 82.35% of the students, who participated in this questionnaire, disagreed with this statement. 17.65% of them agreed with it.



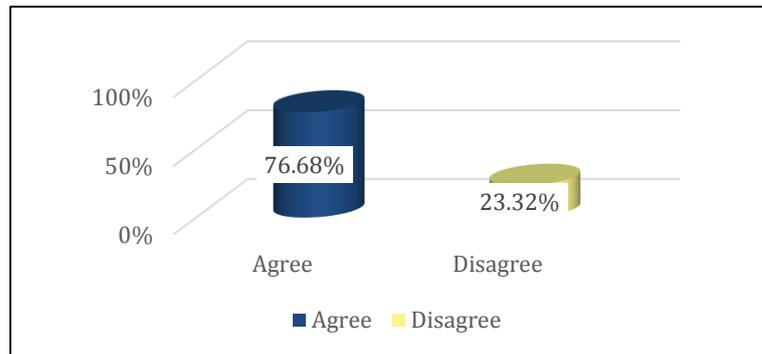
Graph 23: Design of acoustic panels in the library

- **“When I am studying, the place has no disturbing sounds.”** 74.11% of the students agreed with the statement above. Only 25.89% of the participants disagreed, indicating that the spaces have disturbing noise.



Graph 24: Having sound inside the library

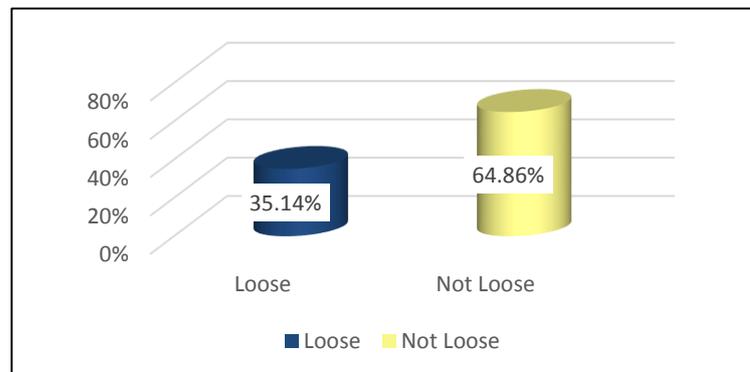
- **“During my stay inside the library, I hear no noise from the outside.”** 76.68% of the participants said, “Yes, there is no noise from outside”, but 23.32% of them disagreed.



Graph 25: Entering outside noise into the library

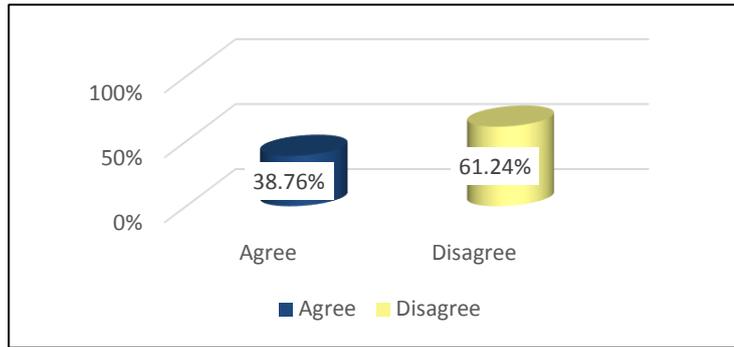
The two questions and their results below are related to thermal comfort.

- **“While studying in the library, there are some times when I lose my concentration due to being too hot or too cold.”** 35.14% of the respondents agreed with this statement, but 64.86% of them believed that the library has an appropriate heating-cooling system.



Graph 26: Hot and cold effects on concentration of the students inside the library

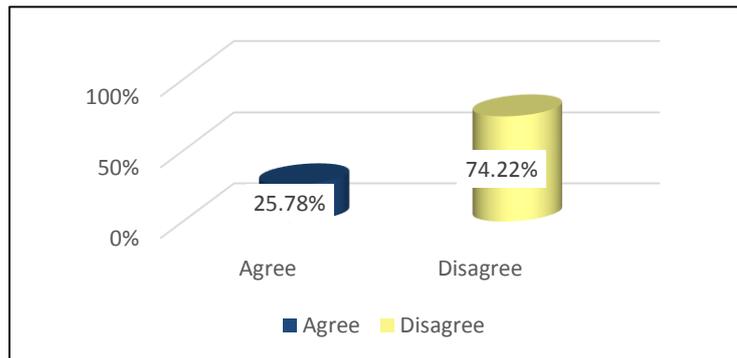
- **“There is a felt difference in temperature from space to space inside the library due to heating and cooling systems.”** 61.24% of the participants disagreed with this statement, but 38.76% of them agreed.



Graph 27: Difference in temperature between the spaces

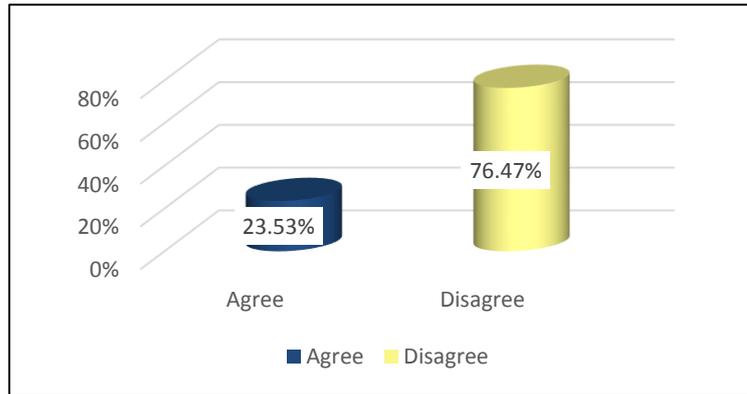
The three questions and responses below are related to ergonomics.

- **“The chairs of this library where students sit while studying are very comfortable.”** 74.22% of the students disagreed with this idea. 25.78% considered the chairs as comfortable.



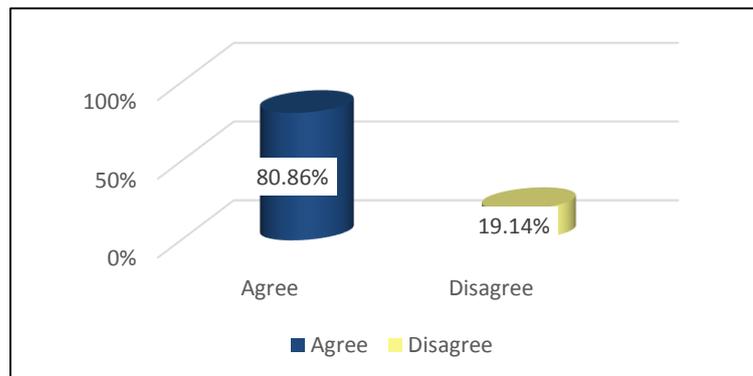
Graph 28: Comfortability of the studying chairs

- **“I do not have back pain when I get up from the library chairs.”** 76.47% of the contributors disagreed with this statement. But 23.53% of them agreed.



Graph 29: Having back pain during staying in the library

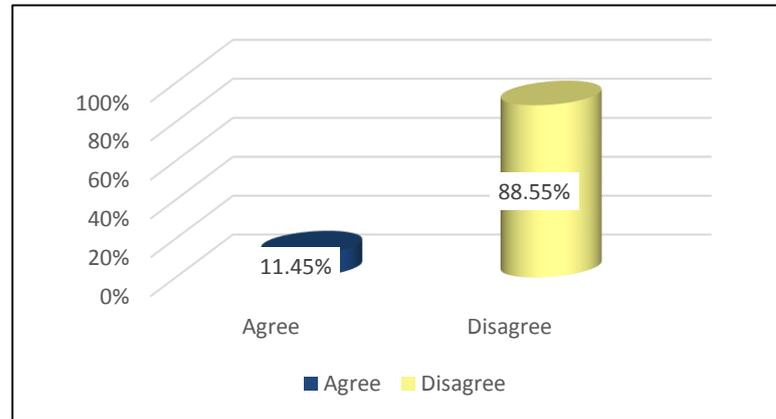
- **“The chairs and tables we use in this library are fit for our study aims and materials.”** In this question, it was asked if the chairs and tables are fit to students’ study aims and materials. 19.14% of respondents disagreed with the statement, but 80.86% agreed.



Graph 30: Tables and chairs capacity to studying materials

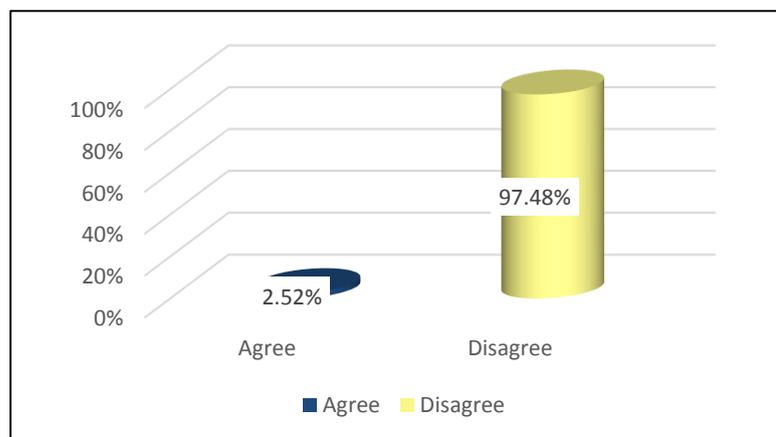
The next two questions and responses are related to human comfort issues vis-à-vis wet spaces design.

- **“The wet spaces are nicely designed, modern and freshly clean.”** 88.55% of the participants’ thought that the wet spaces are not nicely designed, modern and freshly clean, but 11.45% of them had an opposite opinion.



Graph 31: Wet spaces

- **“The wet spaces are designed appropriately for our friends with special needs.”** 97.48% of the students who participated in this questionnaire believed that the wet spaces do not have an appropriate design for students with special needs, whilst 2.52% of them agreed with the statement.



Graph 32: Wet spaces for special needs

4.4 Summary of the Findings

In part 4.3 all the findings derived from the observations were presented. Following each observation criteria, the relevant questions that were asked to the students through the questionnaire were given, together with their results. In this part, an overview of the findings is put together. In this overview, the findings are grouped under the same key-themes like was done for the research criteria.

Spaces for all:

EMU main library seems not to be use enormously by the students in the university because of the location of this library is far from some of the Faculties such as, Pharmacy, Computer Engineering, and Architecture, etc. The majority of the students do not consider the library interiors are a welcoming psychological environment. The researchers observations are in harmony with the students' opinions. Some of the services provided do not have any current meaning for the students. For example, there is a photocopy room. The current students prefer to take photos with their mobile phones, instead of making print copies. The music room was empty. The auditorium had visitors, but it had a very old-fashioned interior.

Student responses signaled that, they need to do group work, or study in groups. The library interior arrangement at the moment does not support this need of the students. The university teaching staff also seems to keep away from the library. Citizens from the close neighborhood or any special needs students were not observed in the library too.

Smart Spaces:

According to the questionnaire results, most of the students need a Wi-Fi, but most of them use their own Wi-Fi because there is a password on the network. Also some of the participants complained that the network is slow. Combining the student views with the observations, it can be concluded that the library is at the moment not well equipped with up-to-date technology. The library has many digital resources; in other words has a “virtual” service. But, according to the results, most of the students are not familiar with the library web site and do not benefit from this opportunity.

Spaces for Socialization:

At the moment, a social gathering place for learning or just as a cafeteria does not exist in this building. However, in participants’ opinion, a social gathering place within libraries or a possibility to have some drinks or snacks within the library building is one of the essential parts of a contemporary academic library. One of the students even wrote a comment saying: “Without my coffee I cannot study, so I don’t like to going there.” [A respondents, sic]

Welcoming Entrance:

As the students that participated in this study replied, most of them are not comfortable with the entrance and they have a bad feeling. There is also no electronic guidance system in the entrance to guide the students to all parts of this library.

Way Finding:

The accessibility inside this building is inappropriate. No elevator can be seen, even though it is a multi-floor library and all study areas and bookshelves are in the second and third floor. Students with special needs in this university have no chance

for using the library services and spaces without any assistance. Besides, the students without any movement or other difficulties also mentioned that, they are not very comfortable with the vertical circulation accessibility within the building. The distances between the bookshelves are also very narrow, making circulation difficult too.

Human Comfort:

As regards to visual comfort, the majority of the students are ok with the colours used in the interior spaces of the library. However, paradoxically, when asked about the colour scheme, they reacted negatively, mentioning that they do not like it.

Regarding the 'light' dimension in the interior spaces, it was observed that the brown colour of the window glasses helped to prevent the entry of direct sunlight to the reading areas, which was pleasant. The participants agreed with this observation. However, they did not feel the same way related to the artificial lighting design choices. The lighting system in this building seemed not acceptable to them. The researcher observations also indicate that the building has inappropriate artificial lighting system, where fluorescent lamps are used. These lamps, not only create noise, they also make a huge glare around study tables.

When considered in general, the results do not indicate any major problem related to vocal comfort in the library interiors. The participants mention that this building has no disturbing sounds from inside. However, as appeared in observations, the heating and cooling system seems to be a significant source for disturbing sounds. The participants also expressed no disturbance related to sounds from outside. Here again, the observation findings were different. The electric generator, which is

located very near the library building, creates a huge noise. How often this generator is actively used is another discussion. With today's technologies, many manufacturers produce high standard materials with acoustic qualities. During observations, no materials with such characteristics could be observed. There were also no acoustic panels to increase the sound quality. Student opinions supported this observation.

Thermal comfort is a big issue in hot and humid climates, such as the one where the university premises are located. The library building has a central heating and cooling system that seems to be functioning very well. The building apparently has equal temperatures in different spaces of the library. But still, some of the participants mentioned that sometimes they do lose their considerations because of the temperature levels in the library.

In terms of ergonomics, both the observations and the questionnaire results pinpoint the fact that the furniture of the library is not very ergonomic and functional.

As also the contributors replied, the wet spaces are not well designed or modern. The observations yielded the same outcome. Universal design principles are not considered in these wet spaces at all.

Towards a Conclusion:

The current study uncovers the fact that Eastern Mediterranean Library, is still sticking to an old traditional role for libraries. It is an introverted space, supporting a very quiet, introverted activity like individual learning/reading. In other words, it is not outward facing, it is not guided by what the students, and faculty and even

alumni need and/or want. That is a very strong handicap blocking the way for transformation. There is an urgent need for EMU main library to get to know the student community better, to work with faculty and to be more involved in the learning content of the different curricula being taught all over the campus, so that it can adopt its physical spaces to the new visions.

Chapter 5

CONCLUSION

In this chapter, an overall summary of the study will be presented. Also some recommendations about the re-design of the EMU main library, which is suggested by the researcher, will be illustrated. Finally, some recommendations for further research will be put forward.

5.1 Brief Summary of the Study

Eastern Mediterranean University has had an enlightenment role in the Middle East Countries in recent years. Whilst EMU has above 20,000 students this academic year, it still suffers from the absence of a 'welcoming' library environment that deserves its high standards in education. The main library is a huge bulky building, with a very rich collection of books and other educational materials; however, the library is not visited as frequently as it would be expected from such a high number of students. Even though there is a dominance of digitalization and Google search, libraries are still considered as the 'souls' of university campuses.

The significance of welcoming environments in libraries has been highlighted in this study. Since library is one of the important, educational spaces in university campuses, libraries, which do not address the basic needs of contemporary libraries, need to adapt themselves in order to create a comfortable environment for learning and social participation. These environments nowadays are also called 'learning commons'.

So far, there has not been a comprehensive study done on the interior environment of EMU-main library. Hence, the purpose of this study was to evaluate this academic space to find out how homogeneous it is with needs and characteristics of contemporary academic libraries. According to literature review, there are many studies, which present criteria suitable for evaluating campus libraries. By benefiting from theoretical readings and these earlier studies, this study created its own criteria tools to evaluate Özey Oral Library.

The study was conducted as a mixed methods research, starting with a qualitative part and continuing with a quantitative phase. In the qualitative part, the researcher made some observations in the library space and then conducted semi-structured informal interviews with special needs students. Based upon the results of this first part of the study, the researcher designed a more detailed structured questionnaire, which was distributed to the students inside the library, and to the students of the Faculty of Architecture. The key-questions shaping the questionnaire included the following key-issues: Spaces for all; smart spaces; spaces for socialization; welcoming entrance; way-finding and human comfort issues.

Analysis of data showed that, EMU library is indeed very little used by students. According to the results of this study, the students, as one of the main reasons underlying this reality mentioned the fact that “they do not feel comfortable” in the library. As a second reason, they mentioned, “there is no place to do group work”. Thirdly, “the absence of Wi-Fi, internet” was put forward. These are all very important problems that cannot be overlooked, but can be solved with careful planning and design.

Over 80% of the students are aware of the reality that, neither the entrance, nor the interior circulation, nor the wet-spaces of the library are designed for their friends with special needs.

Over 80% percent of the students mention that social spaces such as cafes are an essential part of a contemporary campus library.

5.2 Conclusion

There is some clear evidence that EMU has a strong will to update its whole campus. The pavements all around the campus roads are being re-built accordingly. Some faculties, including the Faculty of Architecture has started integrating ramps and lifts into their educational spaces. When there is such a momentum, it is a disappointment to see EMU main library reconstruction as a suspended and un-discussed project. The results of this study are far beyond striking. They identify an urgent need for the transformation of this library based upon the needs of its most significant users, the students. In current architectural and universal design discourse the discrimination of special needs students is a non-explainable misstep and oversight.

Interior architecture is a rapidly growing field with an increasing circle of influence. The interior architects of the future need to be armed with a deep understanding of 'human centered design' in order to become global citizens. A graduate student of the Department of Interior Architecture did the current study. That means the researcher was at the same time a user of the main library under focus herself. This provided a more realistic insight to the researcher, enabling to establish empathy for the problems of the special needs students who played a key role at the initial stages of the study.

Below, evaluation criteria mentioned earlier are summarized and presented in relation to the relevant problems appearing as a result of the analysis. At the same time, some modest suggestions for overcoming these problems are provided by the researcher.

5.3 Summary of Key-problems and Recommendations

The research indicates that, most students do not prefer to use the EMU main library because they do not feel comfortable in the library spaces. Based on the student responses, it is also clear that; the library spaces are not inclusive. This is true not only for special needs students but also for students who do not have equal access to Internet within the library spaces. Students also mentioned that they prefer to study in a group rather than alone. EMU main library so far has no appropriate spaces for group study. Parallel to this, students feel that the presence of a social space like a cafeteria is a key space that needs to be in today's campus libraries. Through these responses, some recommendations for transforming EMU main library spaces have been developed. These are presented below.

Collaboration and Creativity:

- Providing spaces for social interaction, for co-learning and to create a sense of belonging.
- Providing spaces for innovation and creativity so that students are motivated to show their performance and different abilities.
- Eliminating all limitations that prevent the students from using the library, i.e. the library working hours, and any barriers physical or virtual barriers.

Smart Spaces: Integrate Technology to Interior Spaces:

- Provide free equal access to the Internet.

- Design a signage system in the interiors, showing students how to use the library spaces as well as the virtual library.
- Open a section within the library with modern machines for free downloading and scanning of materials, plus printing and photocopying with reasonable prices.
- Design and implement a media-studio, for instructors who need to video-film course materials for their students.

Provide Social spaces – Learning Commons:

- Provide spaces inside the library to let the students have at least a short break, without being concerned about going outside.
- Rearrange interior spaces, so as to provide places for group study/work.
- Provide spaces for leisure, rest.
- Separate the social/group workspaces from individual study places.
- Integrate an information center for faculty who work in committees (such as accreditation), where relevant university information can be archived for collective usage and group meetings take place.

Welcoming Entrance:

- Replace the security part of this library with a hidden one; in order not to disturb students' psychology.
- In the entrance provide an electronic guidance system to help the students reach his/her place that he/she wants.

Accessibility and Movement:

- Have a proper *accessibility* for students, in terms of allowing easy access o the library.
- Redesign the spaces to enable their usage by students with special needs.
- Provide a space to place *elevator* inside this library so as to make the accessibility easier.
- Re-arranging the bookshelves in reading part, so as to be accessing amongst them easier.

Visual Comfort:

- Since the current colors of this library are not disturbing for its users, they can still be used but in a different creative and inspiring scheme.
- Changing the brownish glasses for the library windows to clear glasses, in order to let sunlight enter to active places in the library.
- Horizontal outdoor sun-control elements for south, vertical for west and east.
- More opening on north – advantage – sea-view too.
- Shift to a more hidden lighting system.
- Recolor shelves so that they do not create glare and distract students during their studies.

Vocal Comfort:

- Try to eliminate noise created by the generator and HVAC system.
- Increase noise-absorbing surfaces (carpets, curtains, special walls).
- Add acoustical panels where necessary.

Thermal Comfort:

- Update the heating and cooling system to a more economic and efficient one; such as with a heat pump.
- Provide regular maintenance and cleaning to prevent fungi.
- Make sure, there is natural ventilation.

Ergonomic and Comfortable Furniture:

- Refurbish the shelves to standard ones.
- Change the chairs and tables with more ergonomic, modern, comfortable ones.
- Bring in some furniture for those who want to study in a lying position.
- Change the fixtures with energy saving ones and enable re-cycling.

Recommendations for Further Research:

A similar research could be done with the university faculty and the library staff. It would be interesting to provide an in-depth analysis of their opinions on the latest developments regarding the changes in campus library environment.

Another possible idea would be to make a research on alternative possibilities for collaboration with course instructors and offer a long-term educational cooperation plan that puts the library at the heart of learning.

REFERENCES

- 30 of the Oldest Universities in the World (2015). Retrieved in: ([http:// www.degreelibrary.org/30-of -the -oldest- universities -in -the- world/#wrap](http://www.degreelibrary.org/30-of-the-oldest-universities-in-the-world/#wrap)). Accessed on (May, 5, 2015).
- Abbasi, N., Tucker, R., Fisher, K., & Gerrity, R. (2014). Library Spaces Designed with Students in Mind: an Evaluation Study of University of Queensland Libraries at St Lucia Campus. *35th IATUL Conferences*. Alto University, 2-5 June 2014, Sidney: Purdue e-Pubs, pp. 3-12.
- Abbasi, N., Elkadi, H., Horn, A., & Owen, S. (2012). Transforming Academic Library Spaces: an evaluation study of Deakin University Library at the Melbourne Burwood Campus using TEALS” *Australian Library and Information Association conference*. Deakin University, 10-13 Jul. 2012, Sidney: ALIA, pp.1-13.
- Aktas, G. G. (n.d). *Integration of Sustainability in Interior Architecture Education*. Ankara: TOBB University of Economics and Technology.
- Ancient Libraries : 200s BCE*. (2013). Retrieved in: <http://www.eduscapes.com/history/ancient/200bce.htm>. Accessed on (November, 11, 2015).
- Binggeli, C. (2003). *Building Systems for Interior Designers*. Ed.1, New Jersey: John Wiley & Sons.

- Binggeli, C. (2010). *Building Systems for Interior Designers* . Ed.2, New Jersey: John Wiley & Sons.
- Burgstahler, S. (2012). *Equal Access: Universal Design of Libraries* (Doctoral Dissertation, University of Washington, Washington).
- Casson, L. (2001). *Libraries in the ancient world*. New Haven: Yale University Press.
- Connell, B. R., Jones, M., Mace, R., Mueller, J., Mullick, A., Ostroff, E.,..., & Vanderheiden, G. (1997). *The Principles of Universal Design and Their Application*, United States: The Center for Universal Design.
- Cunningham, H. V., & Tabur, S. (2012). Learning space attributes: reflections on academic library design and its use. *Journal of Learning Spaces*, 1(2).
- Colegrove, T. (2013, June, 10). Libraries of future. [Video file]. Retrieved in: <https://www.youtube.com/watch?v=RvE0gHhK3ss>.
- Damanpour, F. (1996). Organizational complexity and innovation: Developing and testing multiple contingency models. *Management Science*, 42, 693–716.
- Ewald, L. A. (2004). Library Culture in Ancient Rome, 100 B.C. – A.D. 400. *Kentucky Libraries*, 68(1), 9-11.
- Elayyan, R. (1990). The History of Arabic-Islamic Libraries: 7th to 14th Centuries. *Internal Library Review*, 22, 119-135.

Franz, G. (2011). *The Ancient Library at Alexandria: Embracing the Excellent, Avoiding its Fate*. Philadelphia, Pennsylvania: ACR

Gardner, S., & Eng, S. (2005). What Students Want: Generation Y and the Changing Function of the Academic Library. *Libraries and the Academy*, 5 (3), July 2005, pp. 405-420 (Article). The John Hopkins University Press. DOI: 10.1353/pla.2005.0034

Goeje, M. J. (1906). *Al-Muqaddasi: Ahsan al-Taqasim*. Bibliotheca geographorum Arabicorum (in Arabic) III. Leiden: E. J. Brill. p. 449.

Gupta, S. (2010). *Inclusive Libraries - A step towards making libraries disabled Friendly*. India: Barrier Break Technology.

Isiaka, A. O., & Olaide, I. A. (2013). Influence of Library Environments, Instructional Programs, and User Librarian Collaborations on Library Use by Undergraduate Students in Nigeria, Working paper, Nigeria: *Chinese Librarianship: an International Electronic Journal*

Jange, S. (2015). Innovative Services and Practices in Academic Libraries. 4th *International Symposium On*. Noida: IEEE. pp.175-179

Jantz, R. C. (2011). Innovation in academic libraries: An analysis of university librarians' perspectives. *Library & Information Science Research* 34 pp.3–12

Jill (2012). The World's Oldest Library, O'deary Library the power of story. Retrieved In: <http://odearylibrary.com/library-news/the-worlds-oldest-library/>.

Accessed on (May, 5, 2015).

Johnson, D. (2010). Libraries Past - Libraries Future. Retrieved in: <https://www.youtube.com/watch?v=7K-4ZF0x5ic>. Accessed on (February, 2, 2016).

Lippincott, J. K. (2006). Linking the Information Commons to Learning. In Oblinger, D. G. (Editor). *Learning Spaces*. Washington DC: Educause. Pp. 1-15.

Loftus, D. D., & Fox, E. L. (2012). Universal Design, the Library, and Assistive Adaptive Technologies: *LibTech Conference*. New York, Jackson Hieghts.

Lotts, M. (2015). *Implementing a Culture of Creativity Pop-up Making Spaces and Participating Events in Academic Libraries*. American Library Association (ALA).

Madni, A. M. (2012). Elegant systems design: Creative fusion of simplicity and power. *Systems engineering*, 15 (3), 347-354.

Mohanty, S. (2002). Physical Comfort in Library Study Environments: Observations In Three Undergraduate Settings (Master thesis, University of North Carolina, USA).

Oktay, D., & Rustemli, A. (2011). The Quality of Life and Neighbourhood

Satisfaction in Famagusta, Northern Cyprus. Investigating Quality of Urban Life, pp. 233-249.

Orsdel, L. V. (2014, October, 6). Reimagining the Academic Librar. [Video file]. Retrieved in (<https://www.youtube.com/watch?v=ptP0clWoZpA>).

Oswald, G. (2015). *Oldest University Library: American Library Association*. Retrieved in: <http://www.ala.org/tools/oldest-university-library>. Accessed on (May, 5, 2015).

Paradas, S. (2016). *New and Innovative Services in University Library*. New Delhi: University of Delhi.

Rendon, F. (2015). How Innovation and Technology are Shaping Libraries of Today. Retrieved in: http://www.huffingtonpost.com/frankie-rendon/how-innovation-and-techno_b_5244601.html. Accessed on (July, 5, 2015).

Rogers, E. (2003). *Diffusion of innovations*. New York: Free Press

Shen, L. (2006). Designing and Implementing Alternative Library Services. *CLIEJ*. Retrieved in: <http://www.white-clouds.com/iclc/cliej/cl22shen.htm>. Accessed on (March, 22, 2015).

Ugwuanyi, Ferdinand, Chijioko, Okwor, Ngozika, Roseline, ..., & Emmanuel (2011). Library space and place: Nature, use and impact on academic library. *International Journal of Library and Information Science*. 3(5), pp. 92-97.

URL 1: <https://allmesopotamia.wordpress.com/tag/library-of-ashurbanipal/>

URL 2: http://io9.com/the-great-library-at-alexandria-was-destroyed-by-budget-1442659066?utm_expid=6686609068.hhyw_lmCRuCTCg0I2RHHtw.0&utm_referrer=https%3A%2F%2Fwww.google.com.tr%2F

URL 3: <http://eduscapes.com/history/ancient/200bce.htm>.

URL 4: <http://www.sefar.com/data/docs/zh/11401/AS-PDF-Architecture-Lightframe-University-Library-EN.pdf>.

URL 5: <http://www.skyscrapercity.com/showthread.php?t=871954&page=2>.

URL 6: <http://en.academic.ru/dic.nsf/enwiki/11516772>.

URL 7: <http://eduscapes.com/history/contemporary/1900.htm>.

URL 8: <http://www.klamathlibrary.plinkit.org/help/library-centennial.html>.

URL 9: <http://www.citylab.com/design/2012/01/case-saving-ugly-buildings/913/>.

URL 10: <http://www.digitalnc.org/blog/1980s-library-technology-rockingham-county-public-libraries/>.

URL 11: <http://lib.uconn.edu/libraries/homer-babbidge-library/rooms-public-spaces/>.

URL 12: <http://www.ed.ac.uk/staff-students/staff/services-support/card>.

URL 13: http://photos.mlive.com/grandrapidspress/2013/07/grand_valley_state_university_2.html.

URL 14: <http://www.architravel.com/architravel/building/university-of-aberdeen-new-library/>.

URL 15: <http://www.warsawtour.pl/en/tourist-attractions/university-of-warsaw-library-biblioteka-universytetu-warszawskiego-2054.html>.

URL 16: <http://www.greenroofs.com/projects/pview.php?id=1095>.

URL 17: https://www.ncsu.edu/ncsu/design/cud/pubs_p/docs/poster.pdf.

URL 18: <https://spu.edu/depts/uc/response/new/2011-spring/education/a-hub-for-collaborative-education.asp>.

URL 19: <http://ww1.emu.edu.tr/en/campus/library/c/1240>.

URL 20: <http://www.coalesce.com/about/case-studies/grand-valley-state-university/>.

URL 21: <http://www.craigslist.com/article/20140601/NEWS/306019939/new-gvsu-librarys-design-based-on-student-habits>.

URL 22: <http://ebookfriendly.com/modern-libraries/>.

URL 23: <http://www.architecturenewsplus.com/projects/2633>.

URL 24: <http://ww1.emu.edu.tr/en/about-emu/emu-history/c/593>.

URL 25: <http://www.merriam-webster.com/dictionary/comfort>.

URL 26: <http://chronicle.com/article/Video-Campus-Libraries/234341> “Campus Libraries Rethink Focus as Materials Go Digital” November, 2015.

URL 27: <https://stephenperse.wordpress.com/2014/01/19/quaquaversal-cabinet-of-curiosities-and-the-school-library/>.

URL 28: <http://www.slj.com/2008/11/technology/flip-this-library-school-libraries-need-a-revolution/>.

URL 29: <http://www.librarybuildings.info/finland/helsinki-university-main-library>.

URL 30: <http://www.edutopia.org/blog/21st-century-libraries-learning-commons-beth-holland>.

URL 31: https://en.wikipedia.org/wiki/Learning_commons

URL 32: <http://www.designthinkingforeducators.com/>.

URL 33: <http://www.amazon.com/Teacher-ODonnell-Wicklund-Pigozzi-Peterson/dp/0810989980>.

URL 34: <http://www.oxforddictionaries.com/definition/english/library>.

URL 35: <http://alfutuhathat.com/islamiccivilization/Learning%20&%20Scholarship/Libraries.html>.

URL 36: <http://www.omniglot.com/writing/sumerian.htm>.

URL 37: http://www.archdaily.com/599357/montebello-321-jorge-bolio-arquitectura/54cae581e58ece5c5e00029a-intersticios_-2-jpg.

URL 38: http://jefferson.kctcs.libguides.com/enc_091_and_092.

URL 39: <https://lib.wvu.edu/about/giving/>.

URL 40: <http://theyee.ca/News/2012/03/05/Ebook-Libraries/>.

URL 41: <http://library.emu.edu.tr/vircual%20tour/index.htm>.

URL 42: <http://www.ala.org/tools/what-library>.

URL 43: <http://dictionary.reference.com/browse/library?s=t>.

URL 44: <http://www.ilovelibraries.org/librariestransform/about>.

Wellisch, H. H. (1981), Ebla: The World's Oldest Library: *Journal of Library History*, the University of Texas Press, Texas, 16 (3).

APPENDICES

Appendix A: English questionnaire

“Essential Characteristics of a 21st Century University Library Environment”

Questionnaire for Master Thesis Study

This questionnaire is arranged to collect data about EMU Main Library, in Famagusta, Northern Cyprus for the purpose of conducting a research on “the needs of a 21st century library environment” according to students’ perspective. This data will be used within the scope of a master thesis, conducted at the Department of Interior Architecture, Eastern Mediterranean University.

PART A: General Information

1. What is your gender? Male Female
2. What is your nationality?
.....
3. Which department are you studying at?
.....
4. In which level are you studying? Undergraduate Master
PhD.
5. Do you use EMU main library? Yes Sometimes
No
6. If you have not visited the main library in the last year, which of the following reasons describes why?

Please feel free to choose more than one option.

- A. *I had no time.*
- B. *It is far away from my department building.*
- C. *The library hours are not convenient.*
- D. *There is no Wi-Fi to use Internet.*
- E. *There is no place to rest.*
- F. *There is no place to do group work.*
- G. *I get the information that I need from the EMU-main library website.*
- H. *I don't feel comfortable inside the library.*

Regarding the questions below please circle only one answer.

7. I am familiar with the EMU Library website.

Strongly Disagree *Disagree* *Agree* *Strongly Agree*

8. I think, a student can use the Library website to search effectively with little or no prior knowledge.

Strongly Disagree *Disagree* *Agree* *Strongly Agree*

9. Learning at my department requires group work.

Strongly Disagree *Disagree* *Agree* *Strongly Agree*

10. What type of the study do you prefer?

Group Study *Both* *Individual Study*

PLEASE CONTINUE if your answer to question five (5. Do you use EMU-main Library?) was “Yes” or “Sometimes”.

11. How frequently do you use the EMU Library?

Once a semester *Several times a semester* *Once a month* *Every week*

12. If you use the library every week, how many hours per week do you approximately spend in the library?

1- 5 hours *6-11 hours* *more than 11 hours*

PART B: Information related to the interior spaces of EMU Library

Accessibility:

13. It is easy to get to EMU Library.

Strongly Disagree *Disagree* *Agree* *Strongly Agree*

14. When I enter into the library, I feel comfortable going to the upper floors by climbing up the stairs.

Strongly Disagree *Disagree* *Agree* *Strongly Agree*

The Entrance:

15. What was your feeling the very first time you entered into the library?

.....
.....

16. Nowadays, what are your feelings when you enter into the library?

.....
.....

17. In the entrance of the EMU Library, there is an electronic guidance system, which directs the students very well towards the places they need to go to in the library.

Strongly Disagree *Disagree* *Agree* *Strongly Agree*

18. Overall, in the entrance, the students feel comfortable with the reception staff of the EMU-Library.

Strongly Disagree *Disagree* *Agree* *Strongly Agree*

19. The entrance is appropriately designed for the easy access of our friends with special needs (e.g. using a wheel chair).

Strongly Disagree *Disagree* *Agree* *Strongly Agree*

Furniture and fixtures:

20. The chairs of this library where students sit while studying are very comfortable.

Strongly Disagree *Disagree* *Agree* *Strongly Agree*

21. I do not have back pain when I get up from the Library chairs.

Strongly Disagree *Disagree* *Agree* *Strongly Agree*

22. The chairs and tables we use in this library are fit for our study aims and materials.

Strongly Disagree *Disagree* *Agree* *Strongly Agree*

23. The wet spaces are nicely designed, modern and freshly clean.

Strongly Disagree *Disagree* *Agree* *Strongly Agree*

24. The wet spaces are designed appropriately for our friends with special needs (e.g. using a wheelchair).

Strongly Disagree *Disagree* *Agree* *Strongly Agree*

Color:

25. When I study in this library, I feel distracted by the color of the walls, carpets, floors and furniture around me.

Strongly Disagree *Disagree* *Agree* *Strongly Agree*

26. The color schemes used in this library are very suitable for reading or studying.

Strongly Disagree *Disagree* *Agree* *Strongly Agree*

Social Spaces - Cafeteria:

27. If I would like to drink something or have a snack, I have to go out of the library and find a place to get it.

Strongly Disagree *Disagree* *Agree* *Strongly Agree*

28. In my opinion, cafeteria is one of the essential places that should be in a 21st century library.

Strongly Disagree *Disagree* *Agree* *Strongly Agree*

Technology:

29. When I am in the EMU Library and I need to connect to Internet, I have to use my own Wi-Fi.

Strongly Disagree *Disagree* *Agree* *Strongly Agree*

30. According to you, what is the reason for not using the Wi-Fi of the library?

Network is slow *There is no network* *There is password on the network*

31. According to the 21st century needs of students, EMU library is technologically well equipped.

Strongly Disagree *Disagree* *Agree* *Strongly Agree*

Lighting and natural light:

32. The degree of direct sunlight inside the library is not disturbing.

Strongly Disagree *Disagree* *Agree* *Strongly Agree*

33. The florescent lamps in the library are not distracting me.

Strongly Disagree *Disagree* *Agree* *Strongly Agree*

34. The design of the lighting system in the library is very inspiring and appropriate for today's students' needs.

Strongly Disagree *Disagree* *Agree* *Strongly Agree*

Acoustics:

35. When I am studying, the place has no disturbing sounds.

Strongly Disagree *Disagree* *Agree* *Strongly Agree*

36. During my stay inside the library, I hear no noise from the outside.

Strongly Disagree *Disagree* *Agree* *Strongly Agree*

37. In different spaces, there are appropriately designed acoustic panels, which add extra quality to these interiors.

Strongly Disagree *Disagree* *Agree* *Strongly Agree*

Thermal comfort:

38. While studying in the library, there are some times when I lose my concentration due to being too hot or too cold.

Strongly Disagree *Disagree* *Agree* *Strongly Agree*

39. There is a felt difference in temperature from space to space inside the library due to heating and cooling systems.

Strongly Disagree *Disagree* *Agree* *Strongly Agree*

Appendix 2: Turkish questionnaire

Appendix B: Turkish questionnaire

“21. Yüzyılda Akademik Kütüphanelerde kapsayıcılık Holistik Yaklaşım Arayışı”

Yüksek Lisans Tezi için Anket Çalışması

Bu anket, öğrencilerin bakış açısına göre, "21. yüzyıl üniversite kütüphanesi ortamının temel ihtiyaçları" konulu bir araştırmada kullanılmak üzere, Gazimağusa'da DAÜ Kütüphanesi ile ilgili veri toplamak için düzenlenmiştir. Bu veriler, yukarıda ismi belirtilen ve İç Mimarlık Bölümü, Doğu Akdeniz Üniversitesi'nde yapılan bir yüksek lisans tezi kapsamında kullanılacaktır.

BÖLÜM A: Genel Bilgi

1. Lütfen cinsiyetinizi belirtiniz. Erkek Kadın
2. Lütfen uyruğunuzu / hangi ülkeden olduğunuzu belirtiniz.
.....
3. Hangi bölümde okuyorsunuz?
.....
4. Eğitim seviyenizi belirtiniz. Lisans Lisansüstü (Master)
Doktora
5. DAÜ merkezi kütüphaneyi kullanıyor musunuz? Evet Bazen Hayır
6. Geçtiğimiz yıl içerisinde merkezi kütüphaneyi kullanmamışsanız, bunu en iyi aşağıdakilerden hangisi açıklar?

İhtiyaç hissederseniz birden fazla seçenek işaretlemekten çekinmeyin.

- A. Zamanım yoktu.
- B. Benim bölümümün binasından çok uzaktaydı.
- C. Kütüphanenin açık olduğu saatler bana uygun değildi.
- D. İnternet kullanmak için kütüphanede Wi-Fi yoktur.
- E. Kütüphanede dinlenebilmek için uygun yer yoktur.
- F. Kütüphanede grup çalışması yapabileceğimiz mekan yoktur.
- G. İhtiyacım olan tüm bilgileri DAÜ kütüphanesinin web-sayfasından elde edebiliyorum.
- H. Kütüphane içerisinde kendimi rahat hissetmiyorum.

Alttađı sorulara cevap olarak lütfen sadece bir seçenek işaretleyiniz.

7. DAÜ web sitesi hakkında bilgi sahibiyim.

Hiç katılmıyorum Katılmıyorum Katılıyorum Tamamen katılıyorum.

8. Bence, bir öğrenci az veya hiç bir ön bilgisi yokken bile Kütüphane web-sitesini tarama yapmak için rahatlıkla kullanabilir.

Hiç katılmıyorum Katılmıyorum Katılıyorum Tamamen katılıyorum.

9. Bölümümde aldığımız eğitim grup çalışması yapmamızı gerektiriyor.

Hiç katılmıyorum Katılmıyorum Katılıyorum Tamamen katılıyorum.

10. Eğer çalışmanın ne tür otelleri tercih edersiniz?

grup çalışması İkisi de bireysel Çalışma

Beşinci soruya (5. DAÜ merkezi kütüphaneyi kullanıyor musunuz?) “Evet” veya “Bazen” olarak cevap verdinizse, LÜTFEN DEVAM EDİNİZ.

11. DAÜ kütüphanesini hangi sıklıkta kullanıyorsunuz?

Dönem boyunca bir kez Dönem boyunca birkaç kere Ayda bir
Her hafta

12. Kütüphaneyi her hafta kullanıyorsanız, orada haftada yaklaşık kaç saat geçiriyorsunuz?

1-5 saat arası 6-11 saat arası 11 saatten daha fazla

B Bölümü: DAÜ Kütüphanesinin İç Mekanlarına Yönelik Bilgiler

Erişebilirlik

13. DAÜ kütüphanesine ulaşmak kolaydır.

Hiç katılmıyorum Katılmıyorum Katılıyorum Tamamen katılıyorum.

14. Kütüphaye girince, üst katlara çıkamak için merdivenleri kullanma konusunda rahatım.

Hiç katılmıyorum Katılmıyorum Katılıyorum Tamamen katılıyorum.

Giriş Mekanı:

15. İlk kez kütüphaneye gelip, içeriye girdiğinizde neler hissetmişsiniz?

.....
.....

16. Şimdi, kütüphaneye girerken neler hissediyorsunuz?

.....
.....

17. DAÜ kütüphanesinin giriş mekanında, öğrencileri yönlendiren, elektronik bir sistem var.

Hiç katılmıyorum Katılmıyorum Katılıyorum Tamamen katılıyorum.

18. Genel anlamda öğrenciler DAÜ kütüphanesi girişindeki karşılama görevlileri ile kendilerini rahat hissediyorlar.

Hiç katılmıyorum Katılmıyorum Katılıyorum Tamamen katılıyorum.

19. Kütüphanenin giriş mekanı; özel ihtiyaçları olan (örn. tekerlekli sandalye kullanan) arkadaşlarımızın da rahatça girebileceği şekilde tasarlanmıştır.

Hiç katılmıyorum Katılmıyorum Katılıyorum Tamamen katılıyorum.

Mobilyalar ve Donanım:

20. Çalışırken öğrencilerin oturduğu sandalyeler çok rahattır.

Hiç katılmıyorum Katılmıyorum Katılıyorum Tamamen katılıyorum.

21. Kütüphane sandalyelerinden kalktıktan sonra sırt ağrısı hissetmiyorum.

Hiç katılmıyorum Katılmıyorum Katılıyorum Tamamen katılıyorum.

22. Kütüphanede kullanılan sandalye ve masalar bizim çalışma amaç ve malzemelerimize uygundur.

Hiç katılmıyorum Katılmıyorum Katılıyorum Tamamen katılıyorum.

23. Islak hacimler güzel tasarlanmış, çağdaş ve sürekli temizdirler.

Hiç katılmıyorum Katılmıyorum Katılıyorum Tamamen katılıyorum.

24. Islak hacimler özel ihtiyaçları olan (örn. tekerlekli sandalye kullanan) arkadaşlarımızın da rahatça kullanabileceği şekilde tasarlanmıştır.

Hiç katılmıyorum Katılmıyorum Katılıyorum Tamamen katılıyorum.

Renk Kullanımı:

25. Kütühanede çalışırken, duvar ve yer kaplamalarının ve eşyaların renkleri yüzünden dikkatim dağılıyor.

Hiç katılmıyorum Katılmıyorum Katılıyorum Tamamen katılıyorum.

26. Kütüphanede kullanılan renk şemaları okumak veya çalışmak için çok uygundur.

Hiç katılmıyorum Katılmıyorum Katılıyorum Tamamen katılıyorum.

Sosyal Mekanlar – Kafeterya:

27. DAÜ kütüphanesinde çalışırken, birşeyler içmek veya atıştırmak istiyorsam, kütüphanenin dışına çıkıp onları alabilecek bir yer bulmam gerekir.

Hiç katılmıyorum Katılmıyorum Katılıyorum Tamamen katılıyorum.

28. Bence, kafeterya, herhangi bir 21.yüzyıl kütüphanesinin ayrılmaz bir parçasıdır.

Hiç katılmıyorum Katılmıyorum Katılıyorum Tamamen katılıyorum.

Teknoloji:

29. Kütüphane içerisinde, internete bağlanmak istiyorsam, kendi internetimi kullanmam gerekiyor.

Hiç katılmıyorum Katılmıyorum Katılıyorum Tamamen katılıyorum.

30. 33. Sizce, kütüphanedeki Wi-fi niye kullanılmıyor?

Network (ağ/şebeke?) çok yavaş Network (ağ/şebeke) yok
Network (Ağ/şebeke) şifreli

31. 21 Yüzyıl kütüphanelerinin temel ihtiyaçları çerçevesinde düşünüldüğünde DAÜ kütüphanesinin teknolojik donanımı iyi durumdadır.

Hiç katılmıyorum Katılmıyorum Katılıyorum Tamamen katılıyorum.

Aydınlatma ve Doğal Işık:

32. Kütüphane içerisine giren direkt güneş ışığının derecesi/seviyesi rahatsız edici değildir.

Hiç katılmıyorum Katılmıyorum Katılıyorum Tamamen katılıyorum.

33. Kütüphanede kullanılan floresan lambalar beni rahatsız etmiyor/dikkatimi dağıtmıyor.

Hiç katılmıyorum Katılmıyorum Katılıyorum Tamamen katılıyorum.

34. Kütüphane içerisindeki aydınlatma tasarımı bugünün öğrencilerinin ihtiyaçları açısından çok ilham verici ve uygundur.

Hiç katılmıyorum Katılmıyorum Katılıyorum Tamamen katılıyorum.

Akustik:

35. Çalışırken, iç mekanda rahatsız edici sesler yoktur.

Hiç katılmıyorum Katılmıyorum Katılıyorum Tamamen katılıyorum.

36. Kütüphane içerisindeyken, dışarıdan gelen gürültülü sesleri duymuyorum.

Hiç katılmıyorum Katılmıyorum Katılıyorum Tamamen katılıyorum.

37. Kütüphanenin farklı mekanlarında, uygun olarak tasarlanmış ve konulandırılmış akustik paneller, içerideki yaşam kalitesini artırmaktadır.

Hiç katılmıyorum Katılmıyorum Katılıyorum Tamamen katılıyorum.

Isıl Konfor:

38. Kütüphanede çalışırken bazen, içerideki havanın çok sıcak veya çok soğuk olması nedeni ile konsantrasyonumu kaybettiğim oluyor.

Hiç katılmıyorum Katılmıyorum Katılıyorum Tamamen katılıyorum.

39. Isıtma soğutma sistemlerine bağlı olarak, kütüphane içerisinde mekandan mekana çok hissedilebilir ısı farkları vardır.

Hiç katılmıyorum Katılmıyorum Katılıyorum Tamamen katılıyorum.