

BACHELOR THESIS

Enhancement of library services by Design
Thinking methods in the Library of Horlivka
State Pedagogical Institute for Foreign
Languages

written in August 2017 by
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Abstract

This paper proposes the usage of untraditional problem-solving methods of Design Thinking in the Academic Library of Horlivka Institute for Foreign Languages in the city of Bakhmut, Ukraine. The thesis introduces the theoretical aspect of "Design Thinking" approach through its methodology and principles, and the practical aspect through the student' project. It starts with the history of Design Thinking in the early 60s and continues with its modern understanding and methods. Further it presents the library problem field and the role of Design Thinking in enhancing the library services. Following the general structure of Design Thinking methods and the "Toolkit for libraries" designed by IDEO the team of students (design team) defines the library service problems: short opening hours, bad space organization and lack of library events. Further the design team conducts ideation sessions, where students create proper ideas in order to solve the problems. After the ideation sessions the design team does the prototyping. With the help of sketches and event scenarios students can test their ideas in practice. The successful completion of the test phase is determined by the positive feedback.

Keywords: Design Thinking, IDEO Toolkit, design team, Design Thinking challenge, academic library, prototyping, Design Thinking methods, customer journey, personas, brainstorming

Kurzfassung

Die vorliegende Arbeit präsentiert die Verwendung von unkonventionellen Problemlösungsmethoden von Design Thinking in der wissenschaftlichen Bibliothek der Staatlichen Pädagogischen Hochschule für Fremdsprachen in der Stadt Bakhmut, Ukraine. Die Arbeit führt sowohl in den theoretischen Aspekt der "Design Thinking" Methode, durch den Ansatz ihrer Methodik und Prinzipien, als auch in den praktischen Aspekt, über die Durchführung des studentischen Projektes, ein. Die Arbeit beginnt mit der Geschichte von Design Thinking in den frühen 60er Jahren und setzt sich dann weiter mit deren modernen Verständnis und Methoden auseinander. Darüber hinaus wird in das bibliothekarische Problemfeld eingeführt und die Rolle von Design Thinking beim Verbessern der Bibliotheksdienstleistungen erläutert. Nach der Erläuterung der allgemeinen Struktur der Design Thinking Methoden und des "IDEO Toolkit for libraries", definiert das Studenten Team (Design Team) die Probleme der Bibliotheksdienstleistungen: kurze Öffnungszeiten, schlechte Raum-Organisation und fehlende Veranstaltungen in der Bibliothek. Anschließend führt das Design Team Ideation Gruppenarbeit, in denen die Studenten Ideen zu Problemlösung konzipieren. Nach der Ideenbildung folgt der Prototyping Teil des Projektes. Mit Hilfe von Skizzen und Veranstaltungsszenarien testen die Studenten die entwickelten Ideen. Nach der Ideenbildung folgt der Prototyping Teil des Projektes. Der erfolgreiche Abschluss der Test Phase ist durch das positive Feedback bestimmt.

Schlagwörter: Design Thinking, IDEO Toolkit, Design Team, Design Thinking challenge, wissenschaftliche Bibliothek, Prototyping, Design Thinking Methoden, Customer Journey, Personas, Brainstorming

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1 Introduction

Charles William Elliot once marked his attitude to the point under investigation with the statement: „the Library is the heart of the University“. It is truly so. Academic Libraries have always played an important role in the life of universities. Nowadays they have many different functions, no one perceives them as a storage of scientific literature anymore. What we see in the 21st century is that „ [...] academic libraries are facing a rapidly evolving landscape in every facet of their responsibilities and influence. Technology and the capabilities ensuring from new developments are changing the way information is produced, used and perceived by students. While the core mission and offerings of academic libraries may remain in the high-quality services and resources they provide, the challenge of engaging students in their use increases annually and, it seems, exponentially“ (Snively 2012: 9).

Academic Library takes an important place in the campus life for many reasons. Students can conduct their research there, use the Internet and databases or check out necessary books. What's more, they can study in a calm atmosphere, concentrating only on their topics. Certainly there are many different academic libraries around the world; they vary according to the country, city, culture, university and number of students. In this Bachelor thesis one specific library – the Academic Library of Horlivka Institute for Foreign Languages in Ukraine – will be discussed.

Horlivka Institute for Foreign Languages of the State Higher Educational Establishment "Donbas State Pedagogical University" is one of the 17 Universities in Ukraine which had to be relocated to another place as a result of the conflict in the east of Ukraine. By the Order of the Minister of Education and Science of Ukraine from 31.10.2014 № 1242 the Institute was relocated to the city of Bakhmut (30 kilometers away from city it belonged to – Horlivka) until the armed conflict in the east of Ukraine ends.

The Academic Library of Horlivka Institute for Foreign Languages is currently located in the city of Bakhmut. It is one of the most important departments of the Institute, whose tasks are to support the Institute's curriculum and research of the students and faculty in the sphere of foreign languages, literature, history and psychology.

Over the period of two years the Institute has been tackling a lot of problems, the major one of which is lack of financing. The Academic Library was affected by this as well as by many other difficulties. Nevertheless a hard-working team of the Institute,

including its administration, professors, students and staff members made a new start for the Alma Mater with a lot of effort.

In 2016 after winning a USAID¹ Grant the Academic library moved into a renovated place. Now it has a new organized space on the ground floor with new furniture, equipment and resources. The new library looks great on the face of it, but still the number of visits to the library has not increased much since February 2017. This problem is very challenging and demands good understanding of the whole situation. Why is the attendance of the new library so low? What prevents students from going to the library? These are the main among the questions we want to answer in the paper.

1.1 Problem definition

In this paper the situation with library services in the Academic Library of Horlivka Institute for Foreign Languages will be discussed. The ways to enhance the services will be suggested.

Since the Institute's library did not work in a full mode for almost two years this changed students' research routine and their habit of going to the library. So the accrued problems caused poor attendance of the library. The Institute's management and library staff acknowledge the problems and difficulty of their solving. It is understood from several interviews with the head of the library and the deputy director of the Institute conducted in February 2017. The administration claims that the protracted crisis affected the work of the whole Institute and the library in particular. Even now, after the renovation it is visited by few students. Still the head of the library Viktoria Piskun explains, that there is one issue which affects the work a lot: „Unfortunately we cannot offer borrowing services right now, as we are still improving it, it takes time. We are still strongly influenced by the military conflict, we have gone through so many difficulties, but now we are ready to change it. There is a lot of work ahead and we are happy to have people, who want to help us so much. We are sure that even without some services our library can increase its attendance as it has is a whole new working space for students. We just have to look at it from a different perspective, may be untraditional.“

¹ The United States Agency for International Development

The Institute's administration is very concerned about the problems the library has. As it is mentioned above in 2016 the Institute won a USAID grant, which allowed the whole library to be renovated: get new computers, furniture and media materials. The deputy director Tatjana Marchenko explains: „A lot of money was spent on restoring the library. Our goal was to revive the former importance of this place, because our library plays a huge role in the educational and scientific processes of the Institute. The fact that at the moment it is visited by so few students can badly affect the future work of our institution. Unfortunately we do not have professionals in this sphere who could deal with this problem spending enough time on analyzing its causes.“ Thus the problem really exists and the solution requires a certain approach, which differs from other approaches and is not connected with fundraising. In this case we turn to a completely different method of problem-solving – Design Thinking (DT). Enhancing library service can prevent poor attendance.

1.2 Research objective

The purpose of this study is to work out the ways of enhancing the level of library services at Horlivka Institute's Library, using non-traditional Design Thinking methods for problem-solving. As the library doesn't experience financial problems and is able to offer many other facilities besides borrowing, we want to understand why it is badly attended by students. There are the questions to consider in the research:

1. Can we define the problem/-s and find solutions at the given period of time?
2. Is there anything else that prevents students from using the library, except obvious issues?
3. Is it possible to use DT methods in the given case and carry each step through appropriately?
4. Are Design Thinking methods effective enough for the purpose of the paper?

The following hypothesis is put forward for the analysis:

- Bad attendance is caused by poor performance of the library services.

Since library services and students are interdependent parts, it is important to analyze

each one. With the help of DT methods, which are human-centered, we can look at the problem from the library visitors' point of view, considering their opinion. Moreover the range of these methods is big and very experimental: you start with brainstorming, continue with ideation and finish prototyping. These methods are not untraditional, but the structure of this approach on the whole is unique. Thus at the beginning of our research other hypotheses can be put forward. These hypotheses can be confirmed or disproved only upon consideration:

- Design Thinking methods are successful and can help to enhance the library services.
- Design Thinking methods are really a problem-solving approach which can help in this particular case.

Only with the help of Design Thinking methods we could define the "real" problems and solve them.

1.3 Structure and methodology

This thesis is divided into several chapters. The first chapter introduces the topic of the work, its problem definition, objectives and structure, which provide an overview and develops understanding of the subject matter.

The second chapter has methodological nature, it is also theoretical, and starts with the emergence of "Design Thinking" term, on which this paper is based. The chapter elaborates on the history of the term, its development and transformation into the problem-solving approach. The next chapter defines the term "Design Thinking" and its principles. The chapter shows the modern point of view and structure of Design Thinking approach and its practical reference to the subject matter. In paragraph 2.3 the properties of Design Thinking project workflow in the Academic Library of Horlivka Institute for Foreign Languages are explained. Besides, the Academic Library, its services and structure are represented in this part.

The third chapter is about Design Thinking project in the Academic Library. The chapter is divided into three paragraphs, which refer to the Design Thinking phases: inspiration, ideation and implementation. The paragraph "Inspiration phase" discusses qual-

itative research methods, for example interviews with the students and staff and quantitative methods, statistics in particular. Furthermore, qualitative research methods are used in every part of the Design Thinking project as it is a typical method for this purpose. The next paragraph is "Ideation phase", which elaborates on ideation methods such as associational brainstorming. This paragraph consists of the data analysis taken from the inspiration phase, the results of which are transformed into ideas in the following chapter. Further in the paragraph 3.3 "Test and implementation" the final stage of the project which starts with prototyping, further testing and final presentation "Pitch" are described.

1.4 Literature review

"Enhancement of library services" is not a new research topic. Researchers in modern librarianship tend to examine improving library services through technologies – World Wide Web accessibility as an instance. For example, professionals from IIIT University Noida, India explain in their topic "Applications of Web 2.0 in the Enhancement of Services and Resource in Academic Libraries" that new technologies influence the development of library services and their enhancement a lot nowadays, because „[...] the libraries are also transforming themselves into 'information centers'. Readers are elevated from 'information seekers' to 'information confirmers' and finally to 'information consolidators'. The libraries too have become 'learning resource centers' in place of information centers" (Sanjay, Anbu K. 2009: 584).

Successful communication inside and outside the library plays one of the most important roles in enhancement process as well. Dr. Daniel Emojorno (2010), professor of Delta State University in Abraka, Nigeria in his article "The Role of Effective Communication in Enhancement of Library Services: An Overview of Delta State University Library, Abraka" asserts: „In libraries worldwide, communication is used to modify behavior and achieve productivity, and meet goals. Communication is the chief means through which an organization or its members influence or react to one another. The success of any library depends not only on having qualified personnel but also on the interaction among them" (Emojorho 2010: 1). Emojorno (2010) emphasizes the fact that in case of library services enhancement feedback plays an essential role, as you need to understand how to communicate with your library users and be ready the repeat the process if it has failed one way or another.

Shiow-Luan Wang, professor of Department of Information Management, National Formosa University, Huwei, Yunlin, Taiwan in his paper "Development of a Service Framework for Library Users from Customer Relationship Management Perspective" (2012) explains that library services depend on human behavior, because these services are human-oriented, that is why they have to be considered from the users' point of view. He writes: „[...] library service is a kind of invisible product; thus, it is important to obtain user feedback in improving the service being provided" (Wang 2012: 79). From Wang's (2012) point of view user's loyalty makes a big impact on library service, as well as their satisfaction (cf. Wang 2012: 79). The libraries of Central Scientific Library of Moscow Agricultural Academy N. V. Dunaeva and O. A. Yudina (2001) in their article "Improving Information and Library Service in the Central Scientific Library of Moscow Agricultural Academy: New Forms and Techniques" claim big importance of high technologies implementation, which influence enhancement of library services: „A significant advancement of the Library is establishment of the electronic check-out desk using bar-coding. Special attention is given to the state and usage of information technologies that include local databases and remote networks (Internet)" (Dunaeva, Yudina 2001).

So the topic of library services enhancement is widely discussed among librarians in different contexts connected with the introduction of new technologies, best practices of communication with the library-users, implementation of this experience. If to speak about Design Thinking methods with reference to library services enhancement, the topic is quite new. Steven Bell² (2008) in his article "Design Thinking & User Experience" examines the emergence of DT approach and its advantages: „Design thinking can offer a new way of thinking about acting on and implementing our resources and services with more thoughtful and creative approach that is focused on the design of the best possible library experience" (Bell 2008). Bell offers DT methods for better library user experience, understanding the human's behavior in library navigation and their library resources usage. He has been researching this topic for almost ten years and has recently started his blog "Designing Better Libraries. Exploring the intersection of design, user experience and creativity for better libraries."³

DT approach for libraries is getting popular in Germany as well. Franziska Regnerand and Claudia Lienhard present their two-year project in the form of a case study

²Steven Bell is currently Associate University Librarian for Research and Instructional Services at Temple University, and was previously Director of the Library at Philadelphia University.

³ Available from: <http://dbl.lishost.org/blog/author/bells/#.WUbgWmjytQ>

"The Library as a Learning Space 2015"⁴ at the University Library in Rostock. With the help of Design Thinking methods they created new working spaces in the library. The case studies of the kind are often connected with the right setting of the working place. Yvonne Barrett, an Australian school librarian, researches DT methods on school libraries in her work "Design thinking and the school library space: A case study". She explains that practical application of DT methods was crucial for their library spaces re-conception. „Separate spaces were created using the collections to determine the spaces: a picture book area, and distinct primary and secondary fiction and nonfiction areas, providing nominated table areas for student users, in addition to the computer room" (Barrett 2015: 2).

So the topics of enhancement of library services and Design Thinking methods in libraries are well researched according to this literature review. But the problems discussed are not related to the relocated Universities which face specific problems. So the purpose of the study and its practical implication distinguishes it from others. Although the dynamics of enhancing library services is the focus of our attention, suggested scenarios of Design Thinking methods in the works analyzed are taken into consideration. All the literature on Design Thinking as to Academic Libraries is modern, which confirms the novelty of the topic itself and its further possible development. In 2015 IDEO⁵ group created "Design Thinking Toolkit for libraries", which was done particularly for libraries. This toolkit will be used as a structural example for this paper. An overview on IDEO Toolkit will be represented in the second chapter. It's necessary to mention that Design Thinking approach is not well developed in Ukraine. No paper on the matter was found in Ukrainian resources available. It's because of this that a separate chapter will be devoted to the method. Ukrainian readers will understand better the way the plan of enhancing library services has been designed.

⁴ Available from: <https://www.research-collection.ethz.ch/bitstream/handle/20.500.11850/117586/eth-49254-01.pdf?sequence=1&isAllowed=y>

⁵ Design and innovation agency

2 Design Thinking as a problem-solving method

2.1 Emergence of the term „Design Thinking“

„Design thinking is a process for creative problem solving. – says Coe Leta Stafford, Managing Director of IDEO U⁶, - „When we think about design thinking, the first word that comes to mind is human. [...] Design thinking encourages organizations to focus on the people they're creating for and leads to human-centered products, services, and internal processes“ (Stafford, IDEO U blog). Design Thinking was developed and popularized by David M. Kelly – a Stanford professor and a founder of IDEO – design and innovation agency in 1991. IDEO is a company, which uses DT methods to produce human-centered innovations for clients in such companies as Apple and Boeing for instance. David M. Kelly also founded Stanford University's Hasso Plattner Institute of Design (aka d.school), where students learn how to innovate using DT methods (cf. Karinga 2017).

The history of Design Thinking development goes back to the 60s and earlier, since design began its development in relationship to science. Nigel Cross (Cross 2006: 95-96) in his work "Designerly Ways of Knowing" mentioned: „The origins of this emergence of new design methods in the 1960s lay in the application of novel, scientific and computational methods to the novel and pressing problems of the 2nd World War – from which came civilian developments such as operations research and management decision-making techniques. [...] The 1960s was heralded as the 'design science decade' by the radical technologist Buckminster Fuller⁷, who called for a 'design science revolution', based on science, technology and rationalism, to overcome the human and environmental problems that he believed could not be solved by politics and economics.“

Later in the 70s Herbert Simon – a cognitive scientist and Nobel Prize laureate, developed many ideas, which are now considered as elements of DT. He spoke „[...] of rapid prototyping and testing through observation, concepts which form the core of many design and entrepreneurial processes right now“ (Dam, Siang 2017). Peter Rowe, pro-

⁶ „Online school where anyone can unlock their creative potential and solve complex problems through design thinking.“ Available from: <https://www.ideo.com/pages/about-us>

⁷ Richard Buckminster "Bucky" Fuller was an American architect, systems theorist, author, designer, and inventor

fessor of Architecture and urban Design, published in 1987 his book "Design Thinking": „This book is an attempt to fashion a generalized portrait of design thinking. A principal aim will be to account for the underlying structure and focus of inquiry directly associated with those rather private moments of "seeking out," on the part of designers, for the purpose of inventing or creating buildings and urban artifacts" (Rowe 1987: 3).

So Design Thinking has been forming over decades and its emergence is caused by the need of effective problem-solving. Scholars accentuated this need in their works. For example, Richard Buchanan in the article "Wicked Problems in Design Thinking" (1992) proved that Design Thinking is a crucial method in science. He suggested using design as a problem-solving tool for challenging problems.

Nowadays DT is a well-known subject and it is already being studied in many universities around the world. „As design has moved further from the world of products, its tools have been adapted and extended into a distinct new discipline: design thinking" (Brown, Martin 2015). Thus the development of the concept of Design Thinking took many years of study, but it proved a very effective method in many spheres of human life.

2.2 The principles of Design Thinking

Tim Brown, CEO of IDEO company and the author of the bestseller "Change by Design: How Design Thinking Transforms Organizations and Inspires Innovation" is rightfully considered to be one of the main modern popularizers of Design Thinking. He distinguishes that it is „[...] a discipline that uses the designer's sensibility and methods to match people's needs with what is technologically feasible and what a viable business strategy can convert into customer value and market opportunity" (Brown 2008). In such a way design thinking is a human-centered approach, which „[...] taps into capacities we all have but that are overlooked by more conventional problem-solving practices. Not only does it focus on creating products and services that are human centered, but the process itself is also deeply human" (Brown, Wyatt 2010). Design thinking ideology conveys human-centric approach to problem solving, which leads to innovation. In turn, innovation brings a company competitive advantages.

Design Thinking method is different from scientific, as „[...] the scientific method is a pattern of problem-solving behavior employed in finding out the nature of what exists,

whereas the design method is a pattern of behavior employed in inventing things of value which do not yet exist. Science is analytic; design is constructive" (Gregory 1966). In such a way Design Thinking is an experimental approach, which aims to create solutions – good or bad. This approach combines two ways of thinking – divergent and convergent. With the divergent thinking it usually starts as creating as many solutions as possible, this is the initial phase. These solutions can be possible and impossible. What is important is the number and diversity: the more the better. At last with the help of convergent thinking the number of solutions has to be reduced to the best one. As the number of created solutions is usually very big, the end product is almost unpredictable. Like any other method Design Thinking has its procedure, different steps, which have to be followed. This procedure and its ideas, as it is mentioned above, were created in the 1990's by Tim Brown of IDEO and David Kelley. As a result we have now a common approach.

Design Thinking process consists of „[...] a system of overlapping spaces. [...] There are three spaces to keep in mind: inspiration, ideation, and implementation. Inspiration, the problem or opportunity that motivates the search for solutions; ideation, the process of generating, developing, and testing ideas; and implementation; the path that leads from the project room to the market" (Brown 2009: 21). Tim Brown perceives Design Thinking steps as "overlapping spaces", because they flow into each other gradually. The picture shows a curvy figure, which expresses that moving through this process, is „[...] alternating between convergent and divergent thinking, the abstract and the concrete" (IDEO Toolkit 2015: 8).

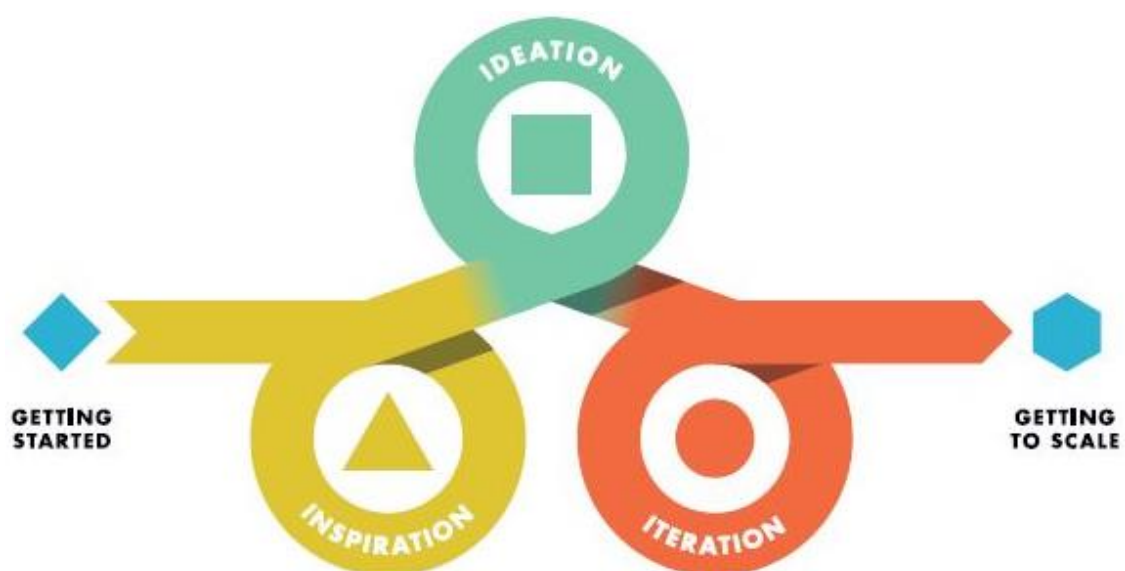


Figure 1: "Design Thinking process" (Source: Ideo Toolkit for libraries 2015: 8)

One of the most distinctive factors of design thinking approach is that moving through the process is non-linear as in the picture below. Here how it works. After each step you come back to empathy, because empathy goes through the whole process, which is very important.

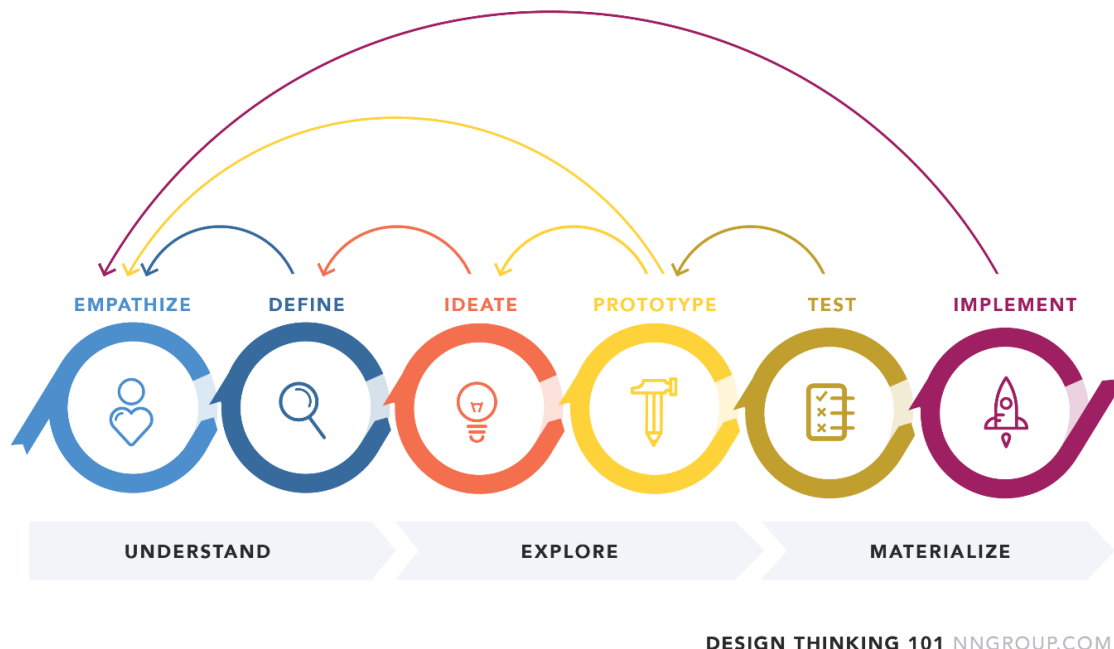


Figure 2: Design Thinking phases (source: <https://www.nngroup.com/articles/design-thinking/>)

Also, one is free to choose whether the members of the design group conduct activities at one and the same stage, or one group collects information and the other do prototyping during the whole process. Moreover at every stage the team can reveal new insights, which leads to a new brainstorming. For example after testing one can get new information about a library or students, in such a way going back to an ideation part. The whole process makes the work flexible and easy to use. There is no strict structure as it is a creative approach.

Tim Brown and Jocelyn Wyatt explain the meaning of each space in their article "Design Thinking for Social Innovation", which is going to be used in this paper as basic knowledge.

2.2.1 First space – Inspiration: creating empathy and definition

Getting inspired or getting an empathic perception of the problem that needs to be solved is the first step of the Design Thinking project (challenge). „Empathy is at the

heart of design. Without the understanding of what others see, feel, and experience, design is a pointless task" (Brown 2013). Creating empathy „[...] involves consulting experts to find out more about the area of concern through observing, engaging and empathizing with people to understand their experiences and motivations, as well as immersing yourself in the physical environment to have a deeper personal understanding of the issues involved" (Dam, Siang 2017).

Empathy has many meanings but its philosophical interpretation corresponds to the Design Thinking library user-centered approach, because it is the ability to put ourselves in other people's shoes, understanding their feelings and needs, desires and ideas. „This is why customer-centric design should be a practice of looking out from the inside—and not as outsiders looking in" (Turnali 2016). You experience the same feelings but you perceive them critically, as you understand their external origin. You open your mind in such a way that it increases your awareness in a state of design mindfulness (cf. Turnali 2016).

There are several questions which have to be clarified during the phase of inspiration:

- What is our target group?
- What is the problem and how it accrues?

There are many activities which can be hold during the inspiration phase like: interviews, workshops and focus groups.

2.2.2 Second space - Ideation

During the empathy process the team creates insights which can be transformed into decisions. This is how it proceeds from empathy to problem definition. Definition is a phase of convergence, when the team clarifies the problem and challenges the status quo. That's why the team stays concentrated and critical to the information they get from the people.

Ideation is a process which shifts between divergent and convergent thinking. „To achieve divergent thinking, it is important to have a diverse group of people involved in the process. [...] They're people with the capacity and the disposition for collaboration across disciplines" (Brown, Wyatt 2010). „This approach helps multiply options to create choices and different insights about human behavior" (Brown, Wyatt 2010). That's why during ideation the team generates as many possible or impossible ideas as it can.

Here is important not to judge the co-workers, but on the contrary to encourage them to be more provocative in their brainstorming and think out of the box. This process can be compared with the photographer's work: a photographer has to do as many snaps as possible in order to choose that only one successful shot.

During this time the team can conduct many different activities, such as: brainstorming, workshops and sketching. It is important to have the ideas in front of the team, for example using flipcharts, white boards or a simple wall with post-its.

2.2.3 Third space – Implementation

After the team has generated as many ideas as it could it can focus on one or some of them, which are the most concrete and bring them to life through prototyping. „A prototype can be a paper model, storyboard, wireframe of a cardboard box. [...] It is a way to convey an idea quickly. The fidelity of the prototype does not matter“ (Ling 2015: 56). Prototyping is a good way to get a feedback and it makes the Design Thinking process faster, with its help it is easier to highlight the pros and cons of the created product or service.

After prototyping a testing phase starts. „The purpose of testing is to learn which works, and what doesn't and then iterate. [...] Testing ensures that you come back to the essential core of design thinking – empathy of users and designing for their needs“ (Ling 2015: 61). This time the team can make a communication strategy through storytelling with the help of multimedia. So this way it is easier to interest potential customers (cf. Brown, Wyatt 2010).

Design Thinking as a method with its three spaces is a good way how to discuss problems in the library.

2.3 Design Thinking approach in the Library

2.3.1 IDEO Toolkit for Libraries

Design Thinking approach wasn't made for specific companies or certain industries. Its methods can be used everywhere. Before the start one thing has to be considered, as

DT is a human-centered approach it predetermines direct work with people. A global design company IDEO is famous for its Design Thinking projects in many sectors of humans' life from creating a "Swipe Sweep" tool for sanitizing the hands in American hospitals to creating the "Clean Team" for Kumasi village in Ghana in order to deal with sanitizing problems in this location. These projects created real challenges, but they are connected as in both of them the teams were using design tools which are human-centered, for example, observing peoples' lifestyle.

The subject of this paper was inspired by the "Design Thinking Toolkit for Libraries" made by IDEO group. This toolkit consists of the main book, which can be described as a text-book that starts with the term definition and its principles and explains each step of a Design Thinking challenge. There is one more book which represents activities kit, which can be printed out and used during the whole sessions as a prop. This kit was developed only for libraries, including some other libraries' cases and stories – like in the picture below.



Figure 3: Library in Ukraine (source: Ideo Library Toolkit 2015: 33)

First of all this kit shows that Design Thinking approach works well for the libraries, which have issues to be solved. Second of all it is built in such a way that it can be used within a team, as it explains how every activity has to be organized. This toolkit guides a team through the whole Design Thinking challenge, giving advice and examples, which makes the way of doing easy and interactive.

IDEO "Design Thinking for Libraries: a toolkit for patron-centered design" is the first library edition and it was published in 2015. It can be downloaded for free on the official web page: <http://designthinkingforlibraries.com/>.

2.3.2 Academic Library of Horlivka Institute for Foreign Languages

This Design Thinking project is conducted in the Academic Library of Horlivka Institute for Foreign Languages. Before starting the Design challenge this paper will introduce the Library itself. All the information can be found on the institute official web page: <http://www.forlan.org.ua/index.php/biblioteka>

2.3.2.1 History of the Library

The history of the Library is closely connected with the history of the Institute. The Library was created in 1949 at Bilotserkivsky Teacher Training College. After the re-organization of the college in 1953 the Library was relocated to Horlivka State Pedagogical Institute for Foreign Languages.



Figure 4: Horlivka State Pedagogical Institute for Foreign Languages in 1956 (source: http://gifl1949.ru/images/Documents/Istoriy_GIFL/Inyz1949.jpg)

The founders of the Library were Muraveynik Nadiya, a veteran of the Second World War, who was the head of the Library for 20 years and a senior bibliographer Gavrilenko Hanna, who compiled the first scientific-bibliographic index "Scientific papers of the professors and teachers of Horlivka State Pedagogical Institute" (1956).

The Academic Library was situated in 130 m² rooms, where all its structural units worked. The location was too small and not suitable for the librarian purposes. The library was collecting its holdings in different ways, but the base of the library stock

was made of books from the Bilotserkivsky Teacher Training College and Dnipropetrovsk Institute for Foreign Languages. At the beginning the Library stock totaled 8600 copies. There were 120 users, who visited the library, 2 librarians and no reading room.

In 1967 the Library was relocated into a new building of the Institute. The library stock at that time was as big as 106 thousand copies. The number of the library users increased to 1000 and there were 12 librarians. At the beginning of the 1968 the Library created new departments such as book acquisition and processing department, research and information department. A reading room for 70 users was created at that time. All these changes contributed to the enhancement of the functions of the whole library and to the library users' service.

2.3.2.2 Holdings

The collection of the Library of Horlvka Institute for Foreign Languages includes more than 275 thousand of books, periodicals and monographs.

Type of media	Amount
1. Textbooks	100.000 copies
2. Scientific literature	25.000 copies
3. Belles-lettres	62.500 copies
4. Periodicals	12.000 copies
5. Monographies	3653 copies
6. Rare editions	2180 copies

Table 1: Library collection in numbers, 2016

2.3.2.3 Building of the Library

In December 2016 the Library started to function anew in a renovated building of the Institute. Both the Library and the Institute were looking for external funding options, as governmental support was not enough. Receiving the grant from USAID (the United States Agency for International Development) made it possible for the Institute to

equip the Library with necessary appliances and replenish it with necessary books and other media materials. „USAID is the lead U.S. Government agency that works to end extreme global poverty and enable resilient, democratic societies to realize their potential.“⁸

The Library is now divided into three zones:

1. Information desk
2. PC-Pool and “Projector-Sofa” areas
3. Small group cercal table with laptops

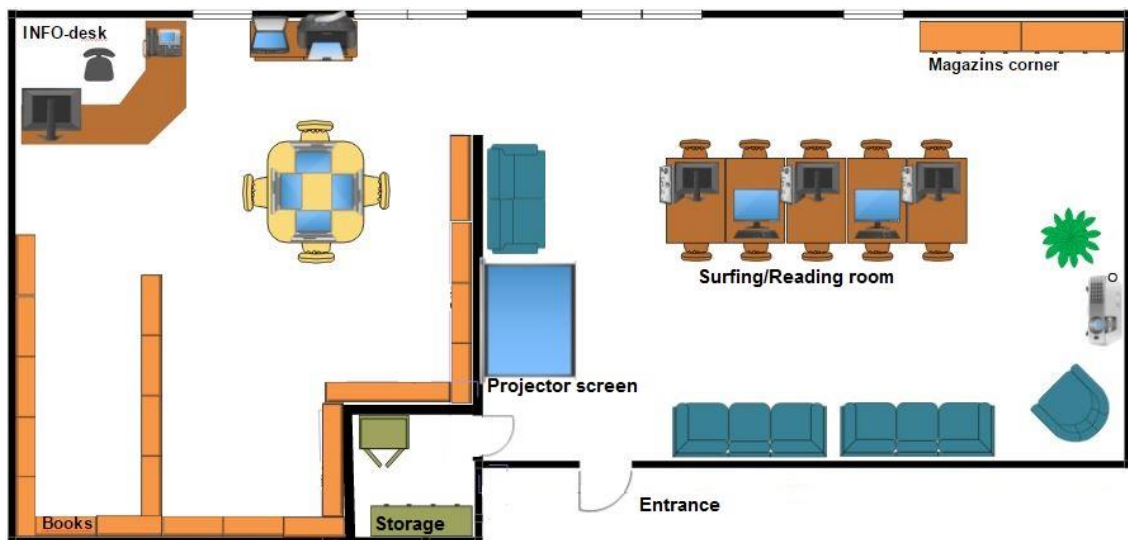


Figure 5: Library plan, February 2017 (made with the Google tool “Smartdraw”)

As it is seen in the picture the area is pretty small, but very well equipped. There is a new PC pool, an overhead projector, new furniture and equipment. There are new book shelves, new laptops in the group-work area. There is a new organized PC Pool and a reading room. A new projector screen and an overhead projector can be used for different purposes, e.g.: presentations or information screen. A new corner with magazines represents English and Russian editions. The Library is not only organized anew, it is totally upgraded. That is why it faces now new challenges how to get the best prospects for the future, become effective, unique and interesting for the visitors.

2.3.2.4 Library services

The Library offers the following services, which are represented on their webpage:

⁸ Source: <https://www.usaid.gov/what-we-do>

Departments	Services
Service desk	<ul style="list-style-type: none"> • Service desk for the members with university library card and interlibrary card. • Membership and borrowing • Renewing and requesting a book • Documents indexing according to the Ukrainian government rules. • Bibliography help
Research desk and others	<ul style="list-style-type: none"> • Internet access and computers • Personal help on demand • Photocopier and scanner • Passwords and logging to online resources.

Figure 6: Library services

2.3.3 The principles of Design Thinking project in the Academic Library of Horlivka Institute for Foreign Languages

All the documentation process takes place in Germany, Hamburg, whereas the place of the project implementation is the city of Bakhmut, Ukraine. So the work has been done at a distance. As an alumnus of Horlivka Institute for Foreign Languages and a future library worker I was granted a permission for the project from the Institute's administration. Moreover my compulsory practice in 2016 was done at the Library of Horlivka Institute for Foreign Languages. Taking all these into consideration I have the rights and confidence to conduct the project. As it has been mentioned I was not able to be present in Ukraine during the whole process, but I have been cooperating with the Student council⁹, Institute and Library's administration since February 2017. Over the period we have been working on the administrative issues, such as: schedule, project place and possible costs. Right now all these issues are under control of the deputy director of Horlivka Institute for Foreign Languages professor Tatjana Marchenko, who is officially supporting this project.

⁹ The student council of Horlivka Institute is group of students that are responsible for some extra-curricular activities and take part in the curricular activities of the Institute. Members of the council in 2017 <http://forlan.org.ua/index.php/stud/studentska-rada>

Together with the Students' council we made a team of 10 students from different departments and different years of study, who participated in the Design challenge. First of all these students represent our target group, because they are potential library users. Second of all this is how empathy is created and we get closer with our target group. And third of all this project is created for the students. Their vision and understanding can reveal the insights which can be used for the problem solving.



Figure 7: Prof. Yulia Gordienko with the students on the first meeting, February 2017

Every Design Thinking project is one of a kind. There can be similar topics and problems but the result can be different. Moreover working in a team means generating ideas together. A good team can create more than just good ideas, but a breakthrough. In order to achieve this success, it is important to make this team.

Of course before the team members are going to cooperate and generate ideas they have to get acquainted and "break the ice". At the beginning of this project we had more than ten people, who wanted to take part in our work. 23 students attended our first meeting. In the upper picture you can see an Institute Professor Yulia Gordienko in the foreground, who leads a very first team-building session.

As an observer I could watch the groups with the help of the Skype technology. In the picture below you can see small groups whose members are getting acquainted. After this session we could see which students are more enthusiastic about the project than the others. This was the first criteria for the future group member. Then it was important to find members, who would have time to devote to this project. Finally, students from as many departments as possible were supposed to take part.



Figure 8: Teambuilding activities at the first group-work, February 2017

Till the end of March 2017 a team of 10 students was made. It supported the whole Design Thinking project. There are three members of the Student council, who are responsible for the whole group and their activities during the meetings.



Figure 9: from left to right: Pacacyja Natija (source: <http://forlan.org.ua/images/foto/2016/studrada/pacacyja.jpg>), Bykovska Tetjana (source: <http://forlan.org.ua/images/foto/2016/studrada/bykovska.jpg>), Gorodilova Ganna (source: <http://forlan.org.ua/images/fot>)

Before making our timetable we have to figure out the following issues:

- ✓ How much time each member of the project will devote to it?

Answer: each member of the project is going to work only during group meetings. In case of extra curriculum and missing classes students will get official permission from the Institute's authorities.

- ✓ The level of responsibilities for each member.

Answer: there are three official members of the team who transmit the tasks from me to big group sessions. We always stay with them in contact (per Facebook and Skype), so that I can participate at the meetings as well. These three students work with me during the whole challenge, as they have an official permission for the whole period of time.

✓ The meetings hours: between the lectures or at free time? Location.

Answer: the meetings hours are going to be between lecture time at the first part of the challenge in May and June 2017 and at free time in July. Location is the Institute's Library.

Timetable			
Project spaces	Project stages	Day	Members
1. Inspiration	Target group	19 May	10 students
	Problem definition	19 May	
2. Ideation	Ideate	25 - 26 May	5 students
	Prototype	26May, 2 June	5 students
3. Implementation	Test	15 - 16 June	5 students
	Final pitch	10July	10 students

Table 2: Project timetable

The timetable above shows official team meetings for each project stage. At the beginning and at the end of the project all team members were supposed to work together, whereas in the middle the groups were going to be split. The whole Design Thinking project was planned for 8 weeks.

So, a group of students were ready to explore Design Thinking potential for the library of Horlivka Institute for Foreign Languages.

3 Design Thinking Challenge

3.1 Inspiration phase

„The Inspiration phase is about listening, observing, and being open to the unexpected. While we may sometimes think of inspiration as something that happens to you, inspiration in design thinking is an active exploration. With the right preparation, the Inspiration phase will empower you with new experiences and perspectives and will give you a great foundation for the next stages of design“ (IDEO Toolkit: 25). In this phase of the project the target group and the problem will be defined.

3.1.1 Target group: identifying the potential target group

„To be market or client orientated, a library needs to understand its clients’ wants and needs, the environment in which it and its competitors operate, its resources and strengths and the social factors influencing our clients“ (Ewers, Austen 2006: 22). The target groups of any academic library are mostly students and academic staff. But it is impossible to consider these groups of people one-sidedly: students who study and teachers who teach. There is a lot more that can help to determine this target segment. According to Ewers and Austen (2006) library users can be segmented into 5 different ways:

- by type - academic staff as teachers and as researchers, community members; students; general staff
- by level of study - undergraduate, graduate, postgraduate
- by information seeking behaviors - coursework students vs research students
- attendance - full-time vs part-time
- age - under 24; over 25 and under 34; mature aged, etc.

The target group plays a very important role in our research and we need to be very precise about figuring it out. In order to get extra information about our target group we can use the other segmentation suggested by Walters and Kent (2013: 35), which has some other classification variables like:

- Demographics variables: qualities such as age, gender, income, ethnicity, edu-

cation, and occupation;

- Geographical variables: information like city, state, zip code, census tract, county, region, population density;
- Psychographic variables: items like attitudes, lifestyle, health, motivation, aptitude, reading level, problem solving ability, hobbies, interests;
- Behavioral variables: usage level, type of use, distribution means

Before we start with the concrete definition of the targets we need to take a glance at the Institute statistics and see the number of students and academic staff.

Year	Students on budget places	Students on contract places	Total
First year	108	12	120
Second year	30	2	32
Third year	38	1	39
Forth year	88	8	96
Fifth year	94	20	114
Sixth year	-	13	13

Table 3: Statistics: Number of students according to the form of pay. 01.05.2017

In the table above we can see that there are more freshmen students and 5th year students. When the number of the second year and third year students is the lowest.

In the next table we can see that there are more full-time students in the budget places, but at the same time there are many distance learning students on the contract basis as well. This characteristic is very important for the future target group definition as we can predict whether the students are usually more occupied, or on the contrary have more free time.

The form of studying	Students on budget places	Students on contract places	Total
Full-time learning	358	56	414
Distance learning	31	145	176
In total	389	201	590

Table 4: Table 4: Statistics: Number of students 2017

In the last table we can see the number of students studying each subject. For our research it is very important information. Both faculties are situated in a new building,

however the students of the faculty of Social and Linguistic Communication have most of the courses in the other building.

Subjects	The number of students in total
Faculty of Social and Linguistic communication	
Ukrainian and Russian	120
English and History	72
Ukrainian and English	30
History and Psychology	22
Psychology and English	20
Psychology	15
Total	239
Faculty of Romance and Germanic languages	
English and German	101
English and French	71
French and English	55
English and Spanish	41
German and English	37
English	24
French	22
Total	351

Table 5: Faculties and students numbers 2017

Talking about the academic stuff there are 68 teachers.

According to the Institute statistics there are 590 students in total from which:

- 120 freshmen (only 12 students study on the contract basis)
- 201 students pay for their studying
- 389 get a scholarship from the government.
- There are more full-time students (414) than distance learning students (176).
- There are 145 distance learning students who study on the contact basis.
- 351 students study only in the new building with the library, whereas 239 students from the faculty of social and linguistic communication study mostly in the building without a library.

Taking all this information into consideration first of all we can distinguish some groups of students:

1. Students who pay for their studying → Ex.: distance learning students
2. Students who get the scholarship from the government → Ex.: full-time students
3. Freshmen

These groups are very important. High-school students in Ukraine go mostly directly after school to the University. The average age of a freshman is 17. I can speak personally from my experience, because I got enrolled to Horlivka Institute of Foreign Languages when I turned 17. Of course there are many older students, but the number is below the average. So we speak now about 17-year-old students, who go to the University fresh after school. On the one hand Ukrainian students who study in small cities don't work, because they have a possibility to get financial help from parents or they get a scholarship from the government of Ukraine¹⁰. On the other hand students cannot get appropriate part time job, so that they can combine their studies and work, especially in small cities. A tiny minority of students still work part time. We can also assume that most of the students of Horlivka Institute for Foreign Languages don't have part-time jobs, so that they have more time for studying and student's life.

Still statistical information shows only the numbers with the help of which we can only make predictions about students' behaviors. That's why at this point of our Design Thinking project we consult our students' team. Our first group work was held on the 19th of May.

3.1.2 Group work: "Define a Design challenge: target group"

Date: 19th May 2017

Participants: 10 Students

Activity 1¹¹:

At this session students were brainstorming ideas about the target group. Every student got an activity sheet of paper with the following questions:

¹⁰ As a benefit for good results Ukrainian students who study on the budget basis get educational (in case of good results) and social (for socially unprotected citizens) scholarships. (According to the Minister of Education 1.01.2017)

¹¹ According to IDEO Library Toolkit: Activities Workbook 2015: 16

- ✓ Who is the user group?
- ✓ What are the problems they face up to that you could solve?

Students didn't know the questions and had to discuss them spontaneously and share their experience as they represent our target group. Here are the summed-up results:

- Our target group are freshmen and second year students. The first two years at the institute are hard as we must do a lot of homework. We stay the whole day at the institute. That's why for students it would be very nice to have a new location to learn, research or do their homework.

- We should concentrate on the 1st and 2nd year students. They are the youngest and most motivated. It is possible to reestablish the habit of using the library. We shouldn't forget the library working hours are inappropriate for the first and second year students.

- The target group can be every student or teacher. We can think about concrete group of young freshmen and 2nd year students, but still think about all the students. As we didn't have the library location before, students just lost this habit and need, they had to find alternatives to it. Our task would be to do it in such a way that students use the library themselves, see its necessity and the role in their students' life.

- We should concentrate on the students of the first and second year. They represent the youngest quote of our Institute which we can influence. Two years ago we couldn't even imagine we could have a library and now it is a renovated building with computers, projector and nice sitting area. Students should get used to it first and we can help them.

This brainstorming exercise shows us that students understand the problems and see the necessity of the change. Judging from the statistics, we can see only demographics, but it doesn't provide us with the user's behaviors which is the most important thing for Design Thinking. We have to know how students would prefer to use the library.

To get more information about the target group our students got a task to interview 5 other students around the campus. The table below demonstrates the results of 5 short interviews.

Name	Olena O.	Maksim K.	Alina I.	Vadim K.	Katerina H.
Age	17	20	17	18	19
Hometown	Bakmut	Horlivka	Lugansk	Horlivka	Donetsk
Faculty of	Romance and Germanic languages	Social and Linguistic communication	Romance and Germanic languages	Social and Linguistic communication	Social and Linguistic communication
Year of studies	1 st year	4 th year	1 st year	2 nd year	3 year
Form of studying; budg-et/contract	Budget basis	Contract basis	Budget basis	Budget basis	Budget basis
Classes during the week	Mo - Thur: 8:30 – 14:30; Fr: 9:30 – 15:30	Mo - Thur: 8:30 – 14:30; Fr: free day	Mo - Thur: 8:30 – 14:30; Fr: 9:30 – 15:30	Mo - Wed.: 8:30 – 14:30; Thur-Fr: 9:30 – 15:30	Mo - Thur: 8:30-12:30; Fr: 9:30 – 13:30
Part-time job	No, get the scholarship and family support	I work at weekends and have family support	No, get the scholarship and family support	I work during the week sometimes and get the scholarship	No, get the scholarship and family support
Usage of library and purpose	At least once a week for Internet and printing out	Right now not at all	Once a week for printing out	Every two weeks for printing out and using the computer	Very often I work on my coursework there and search for literature
Weekend time	"I am usually busy with my homework at home."	"I work or go back home to see my family."	"I learn at the dormitory, and once a month go back home."	"I try to go home every two weeks, do my homework."	"I am busy usually."

Table 6: Students' interviews

At this stage it is possible to define our target group we are going to design for. Using Ewens and Austen's segmentation of library users we can distinguish them:

- by type - students;
- by level of study – undergraduate;
- by information seeking behaviors - coursework students, research students;
- attendance - full-time (mostly);

- age - under 24;

According to Walters and Kent:

- Demographics variables: a lot of students study on a budget basis getting a scholarship, or family support; a small part has part-time jobs;
- Geographical variables: most of the students live in other cities and go home at weekends;
- Psychographic variables: as for freshmen and second year students they are very motivated and study a lot during a week, usually have time for activities after 15:30 during the week;
- Behavioral variables: use the library for mostly using the Internet, computer and printing out.

To sum up we are going to design for undergraduate students (under 24), who mostly study full-time, on a budget basis and who have just started their studying at the Institute. Most of the target group users live in other cities and every weekend go home; during a week they are usually busy every day and study till 15.30. They use the library for different purposes once a week or every now and then for copying out, scanning or using the Internet, very rarely for studying.

Since qualitative and quantitative user research and statistical analytics are done and the potential target group is defined, it is time to create a reliable representation of the target segment. This can be created with the help of „Persona/s” method. This method is used for creating fictional personas-characters, which prototype a concrete user-group, their needs and behaviors. Originally this method was used in Computer-human interaction field and has developed „[...] to being used in many other contexts, including development of products, marketing, planning of communication, and service design” (Nielsen 2013: 7). As personas are fictional characters they can demonstrate the potential users, with regard to the research data, but they cannot be considered as a guidance of use.

Based on the analytics and qualitative research two different personas (a girl and a boy) Kristina and Danil were created. There are several points which were considered:

- Age
- Department, year of studying
- Goals and motivations
- Lifestyle

- Needs, wishes
- Possible library using (for example: learning, computer usage etc.)
- Nature of work: undergraduate or postgraduate; finances: part-time job, family support
- Environment: accommodation, studying possibilities


Kristina	
	<p>Wishes: To get a diploma with honors, a new lap top for her studying, a good university library</p> <p>Needs: Computer, wireless, printer, scanner; 3-4 hours per day for studying. Free weekend for her parents and her boyfriend.</p> <p>How will this person use the library? Kristina will use it as a space for learning during a day or after classes, if she has a spare time. She can use a computer (access information, register modules), wireless. She can use books inside the library and get a qualified support using the databases.</p> <p>Nature of work: Kristina is an undergraduate students, she gets scholarship and has support from her parents. She doesn't work and has time at weekends.</p> <p>Environment: She lives with parents and has her own room. She visits library very often for printing out and scanning. Twice a week she learns there too between her classes.</p>
<p>Age: 17 Department: Romance and Germanic languages Year of studying: 1st year</p> <p>Goals and motivations: Kristina has just started and wants to pass her exams and get a good degree. She hopes to get a job as an English teacher.</p> <p>Lifestyle: Kristina is not an active student. She attends dancing classes at weekends. She studies every day a lot. Sometimes she studies with her fellow students together in a group. Usually she is busy with her homework at home after classes.</p>	

Figure 10: Persona: Kristina's profile


<p style="text-align: center;">Danil</p>  <p>Age: 18 Department: Social and Linguistic communication Year of studying: 2d year</p> <p>Goals and motivations: Danil wants to pass his exams and get a good degree. He hopes to get an internship place in the USA in a year. He hopes to get a job as an interpreter.</p> <p>Lifestyle: Danil is an active student, he is a member of a student council, he attends meeting every Wednesday after classes and participate in local events. He does sport every now and then and go jogging. He hangs out with his friends once a week.</p>	<p>Wishes: New bicycle, more time at weekends, a bit more money for free time, a calm room for learning</p> <p>Needs: Computer, wireless, printer, scanner; 1-2 hours per day for doing classes</p> <p>How will Danil use the library? He will use it as a space for learning during a day or after classes. He can use computer (access information, register modules), wireless. He can use the books inside the library and get a qualified support using the databases.</p> <p>Nature of work: Danil is an undergraduate student, he studies on the contact basis and gets support from his parents. He has a part -time job at the cinema and works there at weekends.</p> <p>Environment: He lives on campus and doesn't visit the library at all as it has no time, and he can study in the evening in his room.</p>
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Figure 11: Persona: Danil's profile

3.1.3 Problem Definition

After we defined our target group we can start dealing with the problem which we generally defined on page 22. During the first phase we could communicate with the students and gather information about their habits. Working in a student team of potential library users help to focus on the user's issues. Basically in the first group work we could figure out the problems. But before providing the results let's introduce some information gathered at the Institute in March 2017.

At that time nothing was known about the target group and the task was to understand the reasons of poor attendance. For this purpose a survey of one question approach with multiple choices was organized. The goal wasn't to measure library user's satisfaction, which is an important and complex thing, that is why we took the risk of measuring student's attendance (cf. Brown 2007: 27). The survey called "How often do you go to the library?" was prepared together with the library stuff and spread by initiative group of students.

Our target group was students from different departments (65 students). On the table below we can see the percent of visitors in March 2017. According to this survey more than 70% of 65 participants use the library once a month, very seldom or never. The percentage of visitors is below the average, which gives us negative results.

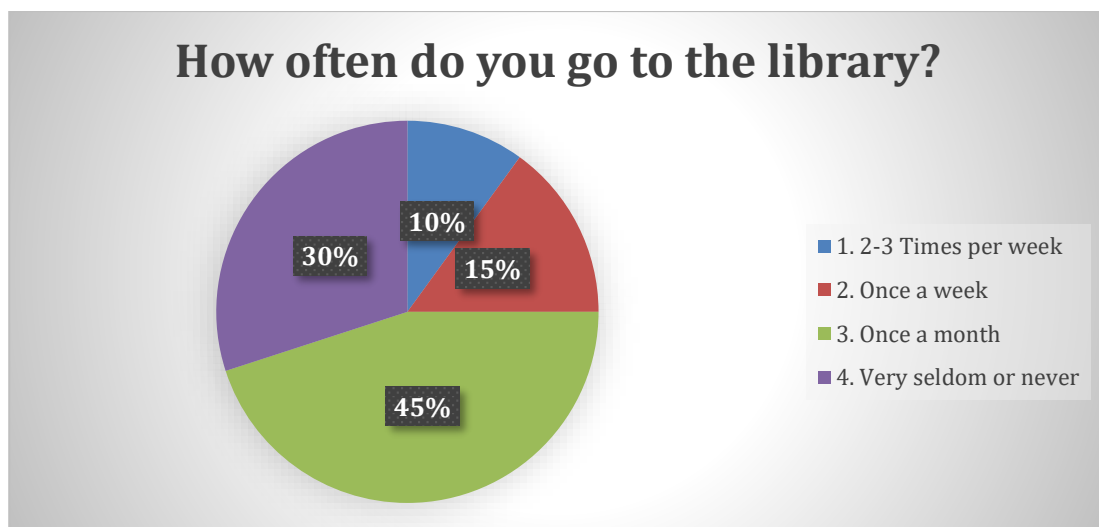


Table 7: Survey "How often do you go to the library?" March 2017

Surely negative results as the first part of the research were expected. That is why student's thoughts about this topic were of great importance. At the second part of the research a group interview with 10 volunteers from different departments was conducted. The principle of DT is to learn from people. Following the IDEO "Toolkit for libraries" the method of user experience helps to understand the users and the problem.

This approach was important, because here the interviewer plays an active role in the whole process ensuring that the right questions on the agenda are addressed. However the group interviews tend to be instructed by the research agenda and a list of questions on the schedule, we still wanted to stay at some parts of the interview uninstructed as during the focus group (cf. O'Reilly, Dograp 2017: 78). The mixture of

these methods helped to create a good atmosphere, where everyone could have a word.

At the table below a short part of a group interview transcript is represented. Data for the research was processed. There are two questions which gave us the greatest concern.

<p>Question no. 1: "How do you find our library in the new building these days?"</p>
<ul style="list-style-type: none"> - I have been there only once and didn't stay long. Unfortunately you cannot borrow books, it is very disappointing.
<ul style="list-style-type: none"> - I find it great, in comparison to what we had before - "nothing". It is amazing. And it is close to the classrooms.
<ul style="list-style-type: none"> - I've been there very often since it moved. Actually I find it very nice and it's calm there, so maybe it is even good that it is never packed.
<ul style="list-style-type: none"> - It looks very unique now, it really does. But I still don't know why to go there as I learn at home.
<ul style="list-style-type: none"> - It is a far better than before. There is a computer pool, Wi-Fi, Magazines and stuff. But I can't learn there as the desks are right at the entrance, which is not appropriate.
<p>Question no. 2: "What would you change?"</p>
<ul style="list-style-type: none"> - It is closed at weekends; it would be great to have it open at least on Saturday.
<ul style="list-style-type: none"> - I would recommend switching the position of the rooms; I mean to move the PC Zone back, because it is very annoying to learn near the entrance.
<ul style="list-style-type: none"> - The working hours are very bad, 8:30-16:30 is very less time, and usually I have classes and can't come during this time.

<ul style="list-style-type: none"> - We have a great library, but it is very inactive. There is a beamer and a projector screen, would be nice to visit some seminars or workshops.
<ul style="list-style-type: none"> - I think it would be a great idea to put the sofas at the books area. - Unfortunately borrowing media is not possible right now, but I would be nice to change it.
<ul style="list-style-type: none"> - I would be good to provide some library excursions, or any kind of events connected to the library.

Table 8: Group interview 10 volunteers, March 2017

Achieving good results after group interview proved that this kind of qualitative approaches „[...] yield a more diversified array of responses and afford a more extended basis both for designing systematic research on the situation in hand and for suggesting interpretations, grounded in experience, of experimental data on the effects of that situation“ (Merton 1990: 135). The following data analysis of group interview data made it possible to identify several problems:

1. Unavailable borrowing service.
2. Short opening hours.
3. Library space organization.
4. Lack of events connected to the library.

Though at the beginning of the research in March 2017 the issues could have already been framed considering student's point of view, still it wasn't the end result. Working in a team in May 2017 allowed to continue working on the project. Every library collects attendance statistics annually. The main reason of collecting them is „[...] to assess the quality and effectiveness of services [and resources] provided by the library“ (Poll 2001: 307). In order to see the number of students visiting the library every day during a week was conducted attendance statistics. The work of door counter was interpreted. Every single student was monitored and saved in the table by library staff. Manual work is very overwhelming, especially during a long period of time, that is why it can't guarantee accuracy. Nevertheless even the average number of attended stu-

dents per day can show whether attendance is low or still satisfactory taking into consideration the total amount of students.

Day	Attend	
	March 2017	May 2017
Monday	8	10
Tuesday	17	23
Wednesday	14	20
Thursday	16	22
Friday	6	14
In total attendance per week	61	89
Hours open per week	40	

Table 9: Attendance statistics February and May 2017

According to the attendance statistics the number of students per week in March 2017 is 61. On the contrary, the number in May 2017 is higher. This difference can be easily explained: in March students start the semester and in May they prepare for their exams or finals. This means that even during the exams the library is attended poorly, taking into consideration the total number of students (590).

3.1.2.1 Group work: „Define a Design challenge: problem“

Date: 19th May 2017

Participants: 10 Students

Activity 2¹²:

¹² According to IDEO Libraries Toolkit at a glance 2015: 5

Continuing the group session students could define the problem using the information collected. At this phase of the project they had to brainstorm ideas about the challenge and write different “How might we (...) ?” questions that could describe it the most. Every participant could do it on a post-it or take notes.

The results of this session show students’ interest in the topic, their deep empathy and desire to participate. The range of possible “How might we” questions is big. Students could impress themselves, use their imagination and creativity on a piece of paper. After everyone was ready the post-its were collected on the board, so that everyone could see and decide whether the meanings are too narrow, too broad, or just right.

- ✓ How might we enhance the library services so that it can allow freshman, second and third year old students visit library more often?

- ✓ How might we create a new space for the first, second and third year old students, so that they attend it often?

- ✓ How might we enhance library services in such a way, that students of 1st, 2nd and 3d year could use it often?

- ✓ How might we change something in the library in such a way, that it would let the students visit it more often?

After the team put the post-its of the board it was understood, that there is still no right challenge statement. That’s why following the IDEO activity students had to brainstorm and answer the questions, which were summarized and documented below:

- What are the aspects of the challenge that you already know a lot about?
What are your assumptions?

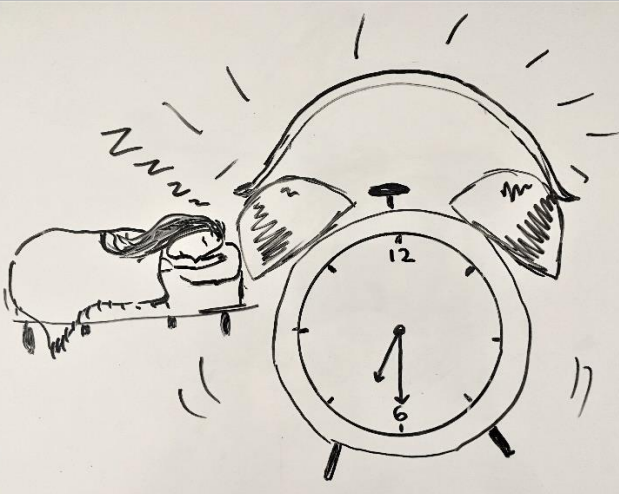
There are different aspects of the challenge that are already known. First of all the target group is defined – undergraduate students of 1st, 2nd and 3d year of studying. Second of all most of the students would like to use the library, but there is one serious issue which prevents it – it is inappropriate working hours and bad space organization. What is as well very important is that the check in-out service is unavailable this year, that is why something new and unexpected has to be created.

- Where are the aspects of the design challenge where you need to learn more?
What don’t you know?

Our target group needs to be observed more. We still don't know the student's routine, how his/her normal student's day looks like.

Summarizing received information from the group work we could see that student's routine information is missing. That is why together with the students we conducted "Customer journey map" method, which can help to see the problem better in context of student's routine example. Customer or user journey is „[...] a tool for mapping all the stages a customer goes through when using a product or a service" (Stickdorn, Schneider 2012: 31). Customer journey „[...] provides a thorough view of the customer experience, highlights untapped opportunities, and simulations idea generation" (Luchs, Swan, Griffin 2016: 115). This kind of methods need qualitative research information, time and effort. The steps of customer journey are the similar to the stages by creating personas, as in the previous chapter. As persona and customer journey methods are familiar, – the following customer journey story will continue the persona analysis from the previous chapter. That's why was decided to take already created personas characters Danil and Kristina. The following customer journeys show us the routine days of two students: Kristina, the freshman, 17 years old and Danil, second year student, 18 years old.

Table 10: Customer journey 1 "Kristina's Monday"

<p>1. Kristina wakes up at 6:30 because her classes start at 8:00.</p>	
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2. She prepares herself a small sandwich and coffee and takes it with her away. She leaves her house at 7:30.



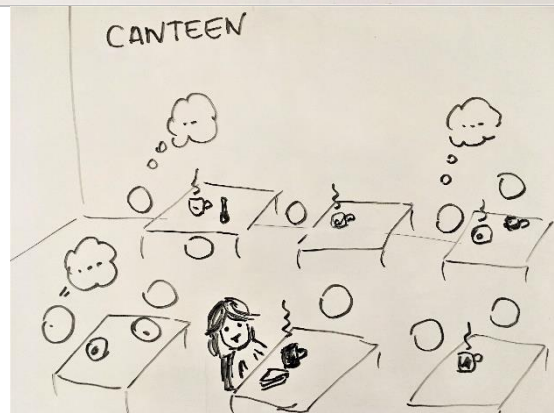
3. At 8:00 starts her first lecture and she feels very sleepy. Between 9:45 and 11.15 she has a gap, so she can learn in the library.



4. As she comes there she sees that it is pretty loud and there is no possibility to learn. So she has to do something else.



5. At 13:30 starts the 30 minutes break, during this time Kristina eats her lunch at the canteen.

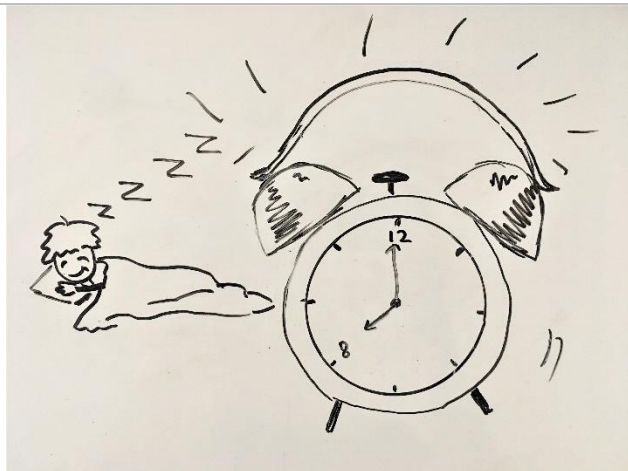


6. From 14:00 till 15:30 she has the last lecture and after her free time. She wants to go to the library and learn a bit or use the computer and then she remembers that library is open only till 16:00, so she goes home.

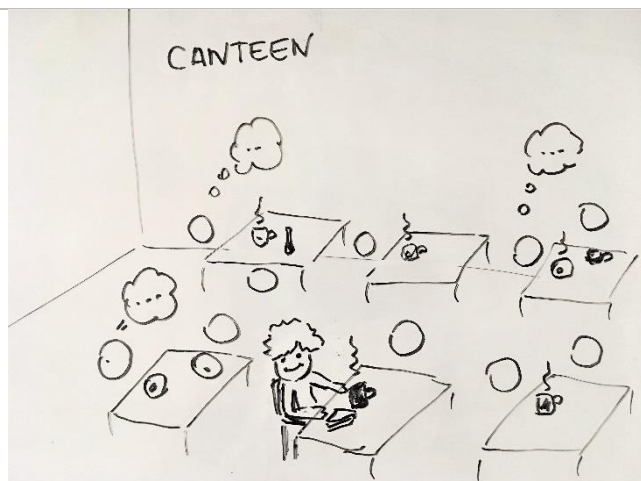


Table 11: Customer journey 1 “Danil’s Wednesday”

1. Danil wakes up at 8:00 because at 8:30 starts his first lecture. He runs to the institute.



2. He has lectures till 13:30 and during the lunch break he goes to the canteen.



3. At 14:30 he has another lecture till 15:30, but then he figures out that he needs to use a computer and print out something for tomorrow. He checks the time and it is already 15:55... It is too late, library is closed, he has to look for another city copy-shop.



Customer journeys tend to make the problems more visible, especially if the group members represent the target group itself. It gives deeper understanding of the problem, because team members could speak from their own experience. With the help of this method it was easier to make the exact statement question for the design challenge:

„How might we change the library situation and the services in such a way that first, - second- and third-year old students can use the library more efficiently for their own good?“

3.2 Ideation phase

„Ideate is the mode of the design process in which you concentrate on idea generation. Mentally it represents a process of “going wide” in terms of concepts and outcomes. Ideation provides both the fuel and also the source material for building prototypes and getting innovative solutions into the hands of your users“ (Hasso Plattner Institute of Design 2010: Design Thinking process guide).

In the following chapter the process of ideation and further prototyping will be described. During this stage the design team is going to transform their insights into as many ideas as possible using different methods and doing curious activities. As men-

tioned in the second chapter of this paper ideation phase is characterized by shifting between convergent and divergent thinking. That's why the number of ideas can be as large as possible, because further it will be reduced to the best ones.

During this period the design team will be divided into two groups of five members. The first team is responsible for the ideation process and the second for prototyping. Through this division the number of members in each group is appropriate enough for coherent team work, since in this case it is easier to distribute roles between five members.

Ideation phase is the center of Design Thinking project. It can be realized through many activities and methods, which suit the team the best. However there are some common methods of DT, which are included in this phase as a must. First of all it is brainstorming. This term was first mentioned by Alex Fackney Osborn¹³ in his book "Applied Imagination" in 1953. He distinguishes brainstorming as technique without criticism and negative feedback. When group members are afraid to express their ideas because of the negativities of their colleges the whole process fails. „When a group works together, members should engage in a "brainstorm," which means "using the brain to storm a creative problem — and doing so in commando fashion, with each stormer attacking the same objective"(Osborn 2007: chapter 33). Osborn distinguishes main characteristics of brainstorming:

- defer judgment,
- reach for quantity,
- welcome unusual ideas,
- combine and improve ideas (cf. Haun 2016: 6).

Though brainstorming is easy from the first sight, it can be challenging in the practice, as you have to know how to start and what to brainstorm about. Before to start the brainstorming session the design team has to organize the framework and choose the leader. The course of the brainstorming session will be realized in the following group work.

3.2.1 Group work: Open hours and Library space organization issues

¹³ Advertising executive and the author of brainstorming method.

Date: 25th May 2017

Participants: 5 Students with librarians

As it is mentioned above the following brainstorming session of the ideation phase is realized in a group of five students. First of all it is important to start the session with an uncomplicated and easy activity, which can reveal students' fantasy and tune in in the best way. Second of all it is to know the intention of the students toward the project and the library. Even if the students are honest and express their ideas loud without hesitation, they can "think" unconsciously something different, which is crucial. In this case we may approach this psychologically using some practices like associative thinking, which aim is to make connections that are logical or on the contrary against the conventional logic (cf. Marshall, Donahue 2014: 3).

For the associative thinking activity students are invited to think up associations on the library topic. In order to make the exercise more interesting and challenging students made up associations beginning with the letters of the word "library". In such a way students have to think deeper as their possibilities are purposely reduced. For example it is difficult to find the words starting with "y", which can be somehow connected with the library. Students wrote their examples on the post-it notes and stuck it to the wall. During a short period of time students expressed their attitude unconsciously through different words. In the picture below the students' answers are represented.



Figure 12: Group work "Associative thinking"

The variation of students' associations is very logical on the face of it. It is possible to group the words into several categories:

Library-literature	Library-university	Library-communication	Library-space	Library-changes	Library-negative
Information	Bachelor	Interactive	Late	Young	Alone
Literature	English [i]☺	Live	Break	Reform	Bored
Books	Languages	Interesting	Room	Rational	Yon
Author	Learn	Active	Relax	Rock'n'Roll	
Read	Research				

Table 12: Group work: words' categories

Most of the categories correspond to the library topic. For example it is logical that the category "literature" and "university" came to the students' mind, as they perceive Academic Library through the prism of studying. That is why the traditional meaning of academic library stands in the foreground. More interesting here is the confrontation of conditionally named groups "communication" and "negative". It is not a secret that students think about library negatively as well, in case they are stressed, tired and have deadlines. Moreover, students feel bored, alone and sleepy. Nevertheless, they perceive the library as a place of communication, which is active, live and interesting, where they can relax, take a break and stay till late according to the results of the "space" group.

Taking this into consideration it is obvious that the library brings positive emotions and students associate it with a cozy place, where they can not only chill and learn, but also find something interesting and interactive.

There is one more interesting group, which is called "changes", because it includes words like reform, young, rational and Rock'n'Roll. This group was called like this, because its words evoke rebellious, radical feeling for changing. It can be assumed that students unconsciously think about changing their library and making it unique, not banal and more for young people.

This brainstorming activity helps to indicate the path for the further ideation process. The design team can ideate something new, bold in order to attract young students. After this activity students are ready to brainstorm further. The words from the group "Library – changes" are chosen to be leading in the further research.

“Young” means intended for young students; “reform” is for making changes, reformation; “Rock ‘n’ Roll” means bold and active design; “rational” is in this case rationally well used space of the library. So the design team is ready for the next brainstorming session, it consults the previous results of the inspiration phase and point out the



Figure 13: Result of brainstorming session: bold ideas

main problems again:

1. Unavailable borrowing service.
2. Short opening hours.
3. Library space organization.
4. Lack of events connected with the library.

The design team is going to take every problem into consideration and try to generate as many ideas as possible. Though unavailable borrowing service the problem cannot be solved right now for technical reasons, which is why the team will focused on other three issues. As the range of problems is quite big the brainstorm session is split into two days, first the team talks about short opening hours and location of zones in the room.

3.2.1.1 Library open hours

Library open hours have to work well for students in their free from studying time. In case students are not able to visit the library during their studies it has to be still possible to visit it after classes. Most of the academic libraries in Germany have long open

hours, as students choose them as a learning space, where they can use the books, Internet and learn in a calm atmosphere. During the exams time libraries are very full and most of the students stay till late. Of course in this case these libraries are big enough to place more than 300 students at once. But even small libraries should give the opportunity to visit it as conveniently as possible.

Talking about Ukrainian academic libraries it's necessary to mention their open hours are very different. For example academic library of Kharkov National Pedagogical University is open during the week from 8:00 till 18:00, on Saturday from 9:00 till 15:00 and the academic library of Dnepropetrovsk National University from 9:00 till 17:45 during the week. Generally there is no specific pattern of how libraries in Ukraine work and their structure may vary. Though a lot depends on funding and allocated budget places for the service staff as well.

The design team managed to brainstorm some ideas about possible work hours of the Academic Library of Horlivka Institute for Foreign Languages. Here is the generalized list of them:

Open on Saturday
Working hours from 9:00 till 20:00
Saturday from 9:00 till 15:00
Students volunteers in the evening and Saturday
Flexible hours for the library stuff, make two shifts: 9:00 – 14:30 and 14:30 – 20:00

Table 13: Brainstorming ideas for open hours in the library

According to the students' feedback from the previous inspiration phase during the work week they study mostly from 8:30 till 15:30, whereas the library closes at 16:00. So there is no chance for the students to use the library in their free time during the week after classes. Half of the students learn at weekends, especially the students of first and second year of studies, when the library is closed.

The idea of our design team would be to make the library available for the students.

Library open Mo – Fr from 9:00 till 20:00	Through prolonging the open hours we make the library available for the students after their classes. During this time the shifts for the library stuff can
--------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------

	be possibly split into two: from 9:00 till 14:30 and from 14:30 till 20:00.
Students as part time job staff	In case if the working hours cannot be changed for the library service staff and can be available only till 16:00, the working hours can be provided till 20:00 but without service. During this time the work can be done by students as assistants, because they are free from classes.
Saturday from 9:00 till 15:00	There are many students who learn at weekends. So the library can be open for student during this time without service. The work can be done by students as assistants.

Table 14: Library opening hours ideas

There are several universities in the eastern part of Ukraine which are in the same situation as Horlivka Institute for Foreign Languages. For example, Donetsk National Medical University and its M.Gorky Academic Library¹⁴ had to relocate from the city Donetsk to Kirovograd which is in the central part of Ukraine. This example works for us as the best practice of open hours. The library is open from Monday till Friday from 9:00 till 19:00 and on Saturday – from 9:00 – 16:00. As there was not enough library staff after the relocation the university authorities hired the students to assist in the library working part-time. Students work during the evening hours from 16:30 till 19:00 and on Saturday. In such a way university authorities engage the students to work for the library and earn the money.

Though prolonging the library open hours and an extra day on Saturday will cost the institute money. Taking into consideration that the institute is smaller than a university and an extra day as Saturday may be not that effective the whole time, because of the

¹⁴ The library web page available here: <http://www.donetsknmu.com/library.htm>

lack of students during the summer vacation for instance. However, during winter and summer exam sessions the library could offer an extra day at weekends. Of course library has to be used rationally which means the ideas must be first tested further in praxis.

So at this stage the design team moves to another problem – library space organization.

3.2.1.2 Library space organization

Since the library won the American grant and purchased new equipment and furniture the appropriate space planning according to the student's needs has not been done. Students are not able to learn in a calm atmosphere, which is why they prefer to learn at home instead. In this case using all the equipment and new furniture is not effective. During the inspiration phase with the help of the design team it was found out that students are not satisfied with the organization of the space in the library. That's why for the following group work it was important to focus on the students' need. The librarians kindly agreed to support the design team during the ideation phase, as their professional point of view is very important.

First of all the main zones of the library that have to be considered were defined. The library is small and basically located in one space, which is divided into several zones:

1. Surfing/reading room with projector screen and magazines' corner
2. Information desk, copy and scan machines
3. Group work area and book shelves

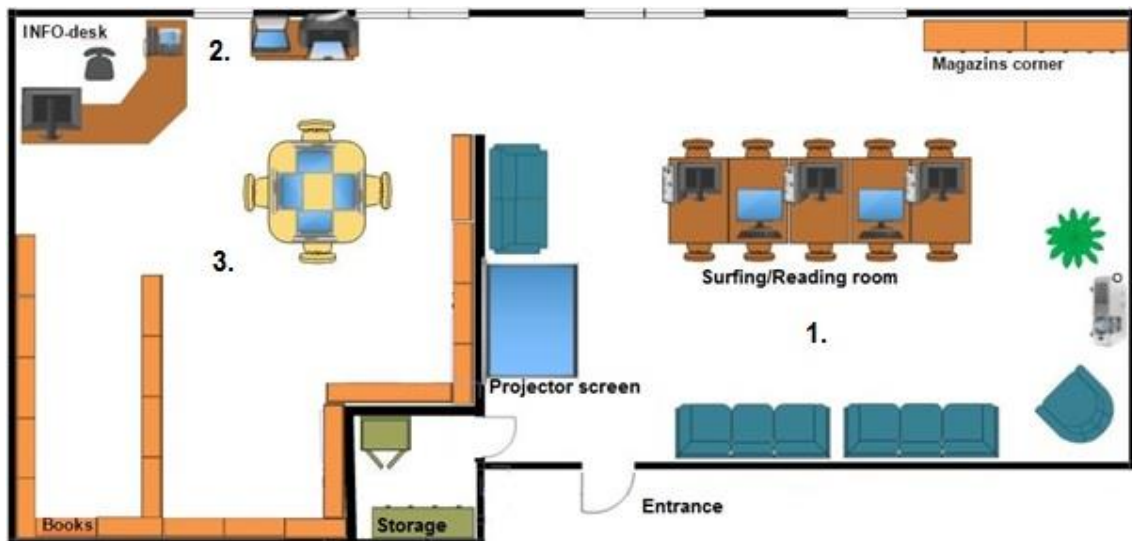


Figure 14: Primary library plan in comparison

According to the library plan the zones are not specially defined. First of all right at the entrance is situated the surfing and reading zone together with the projector screen as in the left picture.



Figure 15: Left picture: Entrance to the library. Right picture: Info-desk

We can see the combination of the calm and noisy zones which is inappropriate. In such a way it is impossible to use them at the same time. Second of all when you come into the library there is no welcoming information desk with library assistants, new guests have to search for it first, which is very inconvenient. In the right picture we can see how it looks in reality. From this point of view librarians themselves are complaining that their desk is hidden and therefore they cannot observe the whole space.

Talking about the group work space within the book shelves, basically is not a bad idea. Though it can be a bit loud for the information desk. But like this the whole big space is only partially used.



Figure 16: Group work area

Together with the design team and librarians we thought how it might be if we combine library coziness and noisiness. As Academic Library can be not only quiet but loud at some point too, full of students who learn, work in groups and do some projects. The team thought about possible combination of all in one space, about making it zoned?

The problem was considered from the librarians' point of view and their role in the library. It was important to find the best place for the information desk. Of course library staff need a good overview as they control the library workflow. As the space is divided by a small corridor between two rooms it would be a good idea to place to information desk in the middle between the two zones. So librarians could stay in the middle and control both zones of the library. In the picture below it is shown how the librarians and students perceive the space organization in the library.

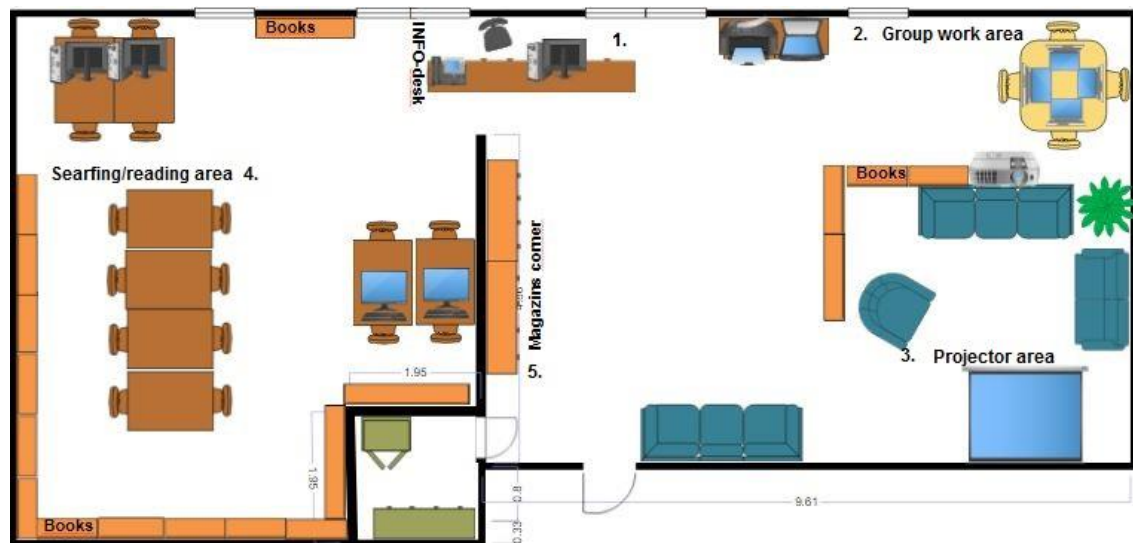


Figure 17: New library plan, June 2017

A new organized library plan shows how the librarian and students see their library. It is a new flexible space which is divided into five clear zones:

<p>1. Information desk</p>	<p>During the group discussion, everyone agreed about the importance of the information desk. Placing it between the two zones can let the librarian assistants control both sides of the library. Moreover new guests will be able to see the desk on entering the library.</p>
<p>2. Group work area</p>	<p>It was difficult to decide about the group area and its importance, whether it is necessary in such a small library. However this place may be used not only as a group work area, but as a research desk as well. Group work area has to be separated from the whole space, so that it is not distractive for the others.</p>
<p>3. Projector area with sofas</p>	<p>It is a special zone, which it is supposed to be used very actively in the future as an event space. On the one hand this area is louder than the others, that is why it is situated near the entrance, so that the students in the reading zone</p>

	wouldn't get distracted by the noise. On the other hand waking through this zone requires some free space.
4. Surfing and reading area	This area is very important for the library, because students can learn there in a quiet and peaceful atmosphere.
5. Magazines' corner	Generally this corner can be found at the entrance to each library, it attracts the users. So the user can take a magazine and read it on the sofa nearby.

Figure 18: New space organization in the library, June 2017

This specific zone division meets the needs of the students and librarians. Here students can learn during the day, because the learning zone is separated from the rest of the library, so that at the same time other students can use the group work corner. Project and sofa area has now a separate corner. However using this area has to be done as agreed with the librarians.

Cooperation of students and librarians shows good results of the ideation group work. With the help of the library staff the design team managed to ideate and prototype two of three main issues – open hours and library space organization. During the session it became clear that all these issues are interdependent. So, for example, successful prototyping of open hours conception is connected with library space organization plan and it is impossible to change only one issue. So the design team can move further and ideate for the next issue – lack of library events.

3.2.2 Group work: "Lack of events"

Date: 25th May 2017

Participants: librarians and students

At the second ideation session the design team cooperates further with the library staff. The library staff in this case plays the role of experts, who can access the group ideas. Moreover both teams will be able to complement each other's ideas, thus it gives better results.

First of all it must be noted that there are many events which take place in the library. The library team emphasizes the fact that since January 2017 the library supports the

institute events with information materials, equipment and its space. The event like “Horlivka Institute gets the friends together” takes place at least once a season. The last one was held on May 9, 2017, and was devoted to the Victory Day. In April 2017 the library hosted a seminar on methods of the English language teaching. For this event the library provided methodological materials, equipment and the library space. So on the one hand the academic library stays very active in the Institute’s life. On the other hand it is not proactive for students, there are no particular events for students. Most of these events are conducted for the academic staff. This situation needs to be changed.

There are other relocated universities from the eastern part of Ukraine. For instance the Donetsk Law Institute of Ministry of Internal Affairs (MIA) of Ukraine¹⁵ in March 2015 obtained its new building in the city of Kryvyi Rih. The academic library¹⁶ of the institute has a similar story and it has had difficult times as well. Through cooperation with other universities it achieved great success. As it is essential to know how other similar libraries overcome the problems we conducted an interview with the library director Natalya Malugina. She shared her story on how they get adapted in a new city and which events for students they make during these difficult times.



Figure 19: Academic library of the Donetsk Law Institute of MIA (Source: <http://library.dli.donetsk.ua/images/new-14.jpg>)

„There are many events which take place in the library, – Natalya Malugina notes. – It was important for us to make a good atmosphere in the library, so that students and

¹⁵ Institute web page available here: http://www.dli.donetsk.ua/index.php?option=com_content

¹⁶ The library web page available here: <http://library.dli.donetsk.ua/>

staff could feel comfortable here. At the beginning we all felt down and, frankly speaking, our library was empty as well. But we wanted to change it so much. We set up our space in such a way that it became a welcoming place for everyone. Borrowing books is not everything for the library, it does a lot more indeed. We create book exhibitions on different topics very often, though it is not that popular with the students. But there are popular events for students, for example, psychological trainings "Posttraumatic military syndrome". We all suffered morally from this war and it is not possible to forget it. These lectures were organized by psychologists and took place in the library, where every student was free to share his thoughts and fears on this topic. We got positive feedback and then we noticed that we get more and more students every day as they find certain resolution of their worries here."

The story of Natalya Malugina is very inspiring and the example of this library is the best practice, which can be used for the development of the Institute's library. Storytelling is a good ideation method. „Sharing stories is about telling stories with a specific intention: to highlight rich areas of opportunity" (IDEO Library Toolkit 2015: 51).

At the beginning of the ideation phase a brainstorming exercise was made and thought about the library was articulated. There are four words that were taken as an inspiration: young, rational, reform and Rock 'n' Roll. The word rational or rationally was used for creating the library open hours plan, the idea was (so to speak) to use the library rationally. The next word "reform" fits the organization of the library space. On consideration it's clear that the design team used the inspirational words unconsciously in every issue. It shows the effectiveness of the brainstorming method for the following research. There are now two more words that can be used for the following issue: Rock 'n' Roll and young.

The idea of psychological trainings in the library can be very successful. The design team consists of the students who noted these trainings could help them overcome stress and fear. Still every weekend students from Horlivka go back home and they witness the situation there. Such trainings in a new library space can be more than effective. Moreover Psychology is taught at the Institute, which means it is easier to find specialists who could arrange the training framework. The library can provide seminars with information materials, equipment and lounge space.

The idea of using the library as a space appeals to the students. The members of the students' council think it's a good idea to use the library for meetings. A new organized lounge could be used as a place where students' council can get together to discuss new ideas. The students' council is a very active Institute's organization which plan

many events. At the moment the library can offer enough place and equipment for their meetings. So these two organizations could cooperate.

The design team brainstorms further with the aim to create something young and „Rock´n´Roll“.

Activities popular with young people				
Music	Dancing	Sport	Travelling	Animals
Going out	Movies	Jogging	Reading books	You Tube
Shopping	TV-shows	Smartphone	Chilling	Swimming
Drawing	Cinema	Riding a bike	Computer games	Acting
Cooking	Music instruments	Open airs	Singing	Make up

Table 15: Brainstorming: popular activities with young people

So the students listed the activities that they enjoy doing after classes and grouped them according to the type of the activity:

Music	Sport and out-door	Exploring	Technologies	Art	Movie and TV	Beauty	Other
Singing	Travelling	Open airs	Computer games	Draw-ing	Cine-ma	Shop-ping	Reading books
Music instruments	Jogging	Travelling	Smartphone	Acting	Movies	Make up	Going out
	Riding a bike	Animals	You Tube		TV-shows		Chilling
	Dancing						Cooking

Table 16: Brainstorming: grouped activities

The task here is to find connections between the library and each group of activities.

So the students build "I can" sentences:

I can	do something	in the library
I can	use smart phone	in the library
I can	watch You Tube	in the library
I can	Draw	in the library
I can	watch movies	in the library
I can	watch TV-shows	in the library

I can	do the make up	in the library
I can	read books	in the library
I can	Chill	in the library

Table 17: Brainstorming: "I can" sentences

After it the best sentences – „I can read books in the library” –was chosen. Students had to brainstorm on this topic further and share their stories in a group.

The idea of watching movies in the library caught everyone’s attention. First of all there is a necessary equipment such as the white screen, speakers, projector and sitting lounge. Second of all students regularly watch movies in the English, German and French languages in their reading classes. During the semester students read several books, discuss them with professors in class and watch the original movie. The first idea is to cooperate with professors and make these movie sessions in the library. Furthermore such cinema sessions can be conducted on a regular basis.

After all the ideas are collected it is possible to get to a new stage – prototyping.

3.3 Test and implementation phase

At the following Design Thinking stage, the design team prototypes the ideas. With the help of prototyping it is possible to see how users react to prototypes, whether they approve them. Prototypes help to avoid pointless products before they show up on the market. There are different types of prototyping, it depends on what kind of product or service the team creates. In the following Design Thinking project we are going to use the most conventional type of prototyping – sketching. Though Bill Buxton ¹⁷ in his article “What Sketches (and Prototypes) Are and Are Not” denotes that sketching are not prototypes, they “are instantiations of a design concept, they serve different purposes, and therefore are concentrated at different stages of the design process” (Buxton). Still sketching seems the most effective process in the following project as we planned a library interior design, among other things, which have to be done in the paper.

After the prototypes are ready they are going to be tested in practice, within the focus group of students. In case of success the ideas can be implemented. In Design Thinking success means positive feedback.

¹⁷ Canadian computer scientist, designer, pioneer in the human–computer interaction field.

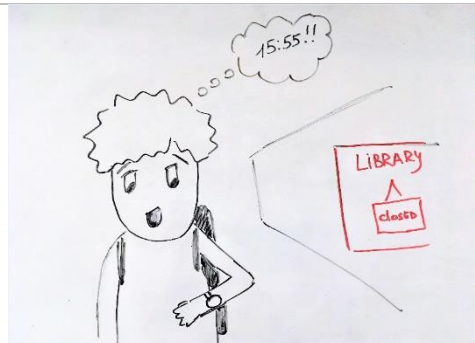
Besides that the team was asked to prototype two library events in June 2017, which were implemented in July 2017. However in frames of the following bachelor paper the result of library open hours cannot be tested to the full as it is realized in the summer time. The results of the prototyping sessions are supposed to be presented to the students and staff and further analyzed through the users' feedback.

3.3.1 Open hours and pace organization prototyping (Group work 26.05.2017)

Open hours and library space organization perform one function – they make the library accessible for the users. The designed conception shows that it is impossible to change only open hours or only reorganize the library space. For example the library is newly organized, there are different zones, which can be used for different types of work, but still after classes students won't be able to use it. So these issues will be considered in prototyping together.

During the definition phase customer journey sketches were created, which showed the present state of things in the library, when students are not able to use the library for learning during the day, as shown in Kristina's customer journey on page 39 of the paper. On the other hand Danil's story on page 41 of the thesis shows that he cannot use the library after classes. So these two customer journey stories are going to be continued in one story, where all the issues are to be considered.

Prolonging the open hours till 20:00 PM, for instance, and reorganization of the library space allow students to use the library after classes, during the day and brings many opportunities. The table below represents new perspectives of the library realized through the customer journey.

Customer journey – Danil in the new library		
		Danil is ready with his classes and he remembers that he needs to copy something and check his mail box. He checks the time and sees that it is already 15:55...


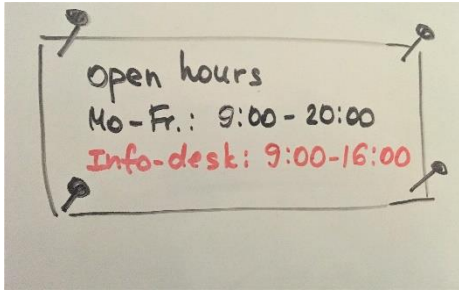
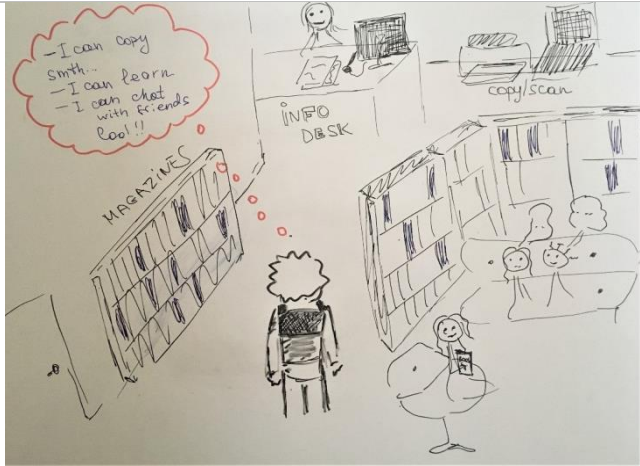
 	<p>He runs to the door and then he sees that the door is still open.</p> <p>Open hours – Mo-Fr.: 9:00 – 20:00</p> <p>Info-desk: 9:00 – 16:00</p> <p>Danil can still copy what he needs and use a computer.</p>
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Table 18: New Danil's customer journey

So this is the alternative ending of the primer customer journey showing the positive end: Danil is able to use the library after classes. Going on with the customer journey the design team shows graphically how new organized space of the library changes the new library, what it brings to the students, which services it offers.

	<p>Danil enters the library and sees that there are some students on the sofa lounge surrounded by DVDs' and bookshelves. Students are chatting and reading there. On the left side there is an attractive magazine corner. In front of him there is an information desk with a student who works as an assistant. Danil plans what he wants to do now here: first he can copy some important materials, then he can learn a bit and after that he could join his friends in the lounge area.</p>
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After he copied some materials he wants to find a calm area for learning, as it is pretty loud out here. Danil explores the library further. As he passes by the information desk he reaches the learning area, which is surrounded by bookshelves as well. There are plenty of tables, where students are learning and reading quietly.

There are some computers there as well. Danil decides to stay here for a while and use a computer. As most of the bookshelves are in this room it is easier to learn, as everything what you need is in the same place.



After he finishes learning and surfing the Internet he decides to chat with his classmates, who are working on a project in the group work area.

The group work area is situated in the "loud" zone, or to put it in other words, the zone where students can talk. There is a table with some library laptops, so students don't need to bring their own equipment. Danil remembers that tomorrow he is going to join his group here as well. According to the library group work schedule, this is exactly what the plaque on the wall shows. Eve-

	<p>ryone who wants to use the group work area has to register at the information desk.</p> <p>Then Danil sees that some students are watching a movie at the sofa corner. There are not so many students and they are holding some pieces of paper with the tasks. This is a cinema session, which is held in the library too. He thinks about visiting it next time.</p>
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Table 19: New Danil's customer journey: positive ending

The following customer journey prototype shows how some easy things change many complicated problems. The concept was presented to the students and staff on the final pitch on the 10th of July 2017.

3.3.2 Prototyping events: "Posttraumatic military syndrome" (Group work 02.06.2017)

Posttraumatic syndrome is a mental disorder, which accrues after a person witnessed or exposed himself to a severe event. Most of the students of Horlivka Institute for Foreign Languages come from the Donetsk region which has been in a state of war for two years. There are students who lost their homes as they were destroyed during massive bombing. Some of them lost their friends and members of their families, but they still remain strong as life goes on. So the idea to make this event in the Institute can be very successful.

There is a department of Psychology at the Institute, their professors have been trained in the International Organization «Doctors without Borders». This is an independent organization which aim is to give emergency aid to people who got affected by wars, epidemics, nature disasters and so on (cf. Wikipedia 2016). Of course this kind of trainings have to be conducted by professionals, so for the following prototyp-

ing session the professor of Psychology department was invited, who we want to interest in holding this event.

This event can be conducted regularly in the course of several weeks, its aim is to form communication and overcome internal conflicts. The advantage of such group meetings is that a group experience counteracts alienation, helps to solve interpersonal problems, young people avoid unproductive circuit in itself, discovers that their problems are not unique, that others are experiencing similar feelings (cf. Ann 2007: 35).

The role of the library in this event has to be reconsidered:

1. Library provides methodical materials on Psychology and Pedagogy
2. it provides the space and equipment,
3. it facilitates friendly atmosphere, as libraries associate with something quiet and reposeful.

Library in this case plays an organizational role, cooperates with Psychology department professors and develops the event plan. It is responsible for sharing the events in social media channels like V Kontakte.ru or Facebook. The students' group there is moderated by the student council and can help share the events among the students. Therefore, the library will show its active position in the Institute's life, interest in working with students and understanding their needs.

With the help of Professor Oksana Gritsuck the design team prototyped part of the event plan.

No.	Type of activity	Description
1.	Greeting. Talk about Psychology. Basic rules of the training.	The teacher explains what Psychology is, what this profession is about and how it can help people. She/he explains some of the rules of this profession like: „Do not get anything into the soul unless you are invited“, „You can ask whatever you like and how you like“, „The information is only with me, It will stay only between us two“ and so on.
2.	Test “Your choice”	The teacher distributes between the student test forms. Students have to put the names on the form and answer the questions concerning the work flow, ranking them between positive 2 and negative - 2. For example: <ul style="list-style-type: none"> - Do I need this training?

		<p>2 (I want it a lot) 1(I want) 0 (I don't mind) (-1 no, I don't) (- 2 I don't want at all)</p> <p>- Do I want to learn how to communicate, to focus and other techniques?</p> <p>2 (I want it a lot) 1 (I want) 0 (I don't mind) (-1 no, I don't) (- 2 I don't want at all)</p>
3.	Getting acquainted	<p>Students can write any name they like on their badges, names can be real or fictional. Then they have 10 minutes time to get to know as many people as possible. It is important to denote the personality and remember personalities of those present. After it everyone names her/his new friends in a circle.</p>
4.	Test "Who I am, what the others think about me?"	<p>The teacher distributes a test-form with many questions. Students have to answer YES/NO to the questions. The questions are grouped according to the topic. Each group of students can evaluate their answers and read the interpretation.</p>
5.	Test "Self acceptance"	<p>Here students are going to work on their limitations and habits, which they knew before the training and understood during the tests. Students have five minutes to fill in the table with the set of their limitations upon finishing the table of their personal values.</p> <p>After it students discuss their results in groups, following the psychological rules, set at the beginning.</p>
6.	Playing games	<p>"Stand in a circle"</p> <p>Students make a circle around the teacher. After the word "go", they have to close their eyes and move around, making humming sounds, without touching anyone. When the teacher says "stop", they have to stop and without opening the eyes and touching each other make a circle again.</p>

Table 20: "Posttraumatic military syndrome" scenario prototype

According to Oksana Gritsuck this kind of events can have many different activities. Moreover these are not only tests, but games, dramatizing, drawing and so on. Trainings can be conducted in the Library sofa corner. The most important here is that students have to feel comfortable in this place. In the sketch below we can see that the students are situated in the protected from both sides area, with a nice soft sofa, bookshelves, which make them feel like home. The area is not completely closed, and the students don't feel like totally locked in the room.



Figure 20: “Posttraumatic military syndrome” event sketch in the library

In such a way event location is very important as well as the activities. So the library space is here very appropriate, which can contribute to successful conduct and good attendance.

3.3.3 Prototyping events: “Library cinema” (Group work 02.06.2017)

Cinema events are very popular with language learners all around the world. Usually these events are conducted by the Students' council several times a year. The aim of these events is to entertain students, get them together, show the activity of the Students' council and the sponsors (in case they are involved). Moreover, cinema sessions are fun and easy to conduct, they require only special equipment and space.

As all young people enjoy watching movies, no wonder during the ideation phase the design team picked up this idea. Considering that libraries are very quiet places, it is worth thinking whether this is appropriate at all, whether this will disturb the librarians and other users. Cinema sessions are certainly “loud” events, and showing just movies in the library makes no sense. First of all, in this case the library doesn’t play here any role, but just provides equipment and space. Second of all, the library space in the library is too small, because the Students’ council should count on big number of students, who would like to join in. In order to solve these problems these events need to be conducted in specific cases. The idea of the design team is to make these sessions not only entertaining, but educational as well.

What is the role of the library in this case?

- It provides its space and equipment, reading and media materials, such as books and DVDs;
- it promotes reading of foreign literature;
- it entertains students, make studying more interesting
- and of course, library promotes itself in students’ life.

Horlivka Institute for Foreign Languages is first of all a place, where students have a possibility to learn one or two foreign languages during four years of a Bachelor degree program. Therefore, holding these events is part of learning languages. On page 55 of the paper it was mentioned that the library can cooperate with the Institute departments, which in its turn, can conduct their movie sessions in the library lounge. It can be realized according to the schedule during the day hours, when the library is not that packed. Professors pick the days from the group schedule, which are planned for movie sessions (there are usually 2 sessions for a group during a semester). For example, Group **A1** has two movie sessions on the 4th and 11th of November, **B1** has on the 2nd and 9th of November.

November						
M	D	M	D	F	S	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22

23	24	25	26	27	28	29
30	31					

Table 21: Cinema sessions' schedule prototype

Horlivka Institute for Foreign Languages works in compliance with the standards of Cambridge Syndicate¹⁸ – a non-teaching organization of Cambridge University. According to its standards there is a list of books that are recommended for reading to pass its exams (FCE, CAE, CPE) successfully. Besides, books like "The painted veil" by William Somerset Maugham, "Pygmalion" by George Bernard Shaw are in the classical compulsory list of books to read during the first three semesters. These novels are filmed as well, so students watch these movies after reading, complete the activities and discuss differences between the book and the movie. As it was already said these are compulsory classes, but they can be conducted as fun cinema evenings? The aim can be still the same – to learn more words. Cambridge Syndicate has a big library of methodological materials, which are free for downloading from their web pages. The whole process can be distributed between librarians and the student council. Here is the possible organization flow:

1. Students' council make a list of movies which they prefer to watch and give this list to the library;
2. Librarians look for the methodological materials on the Cambridge Syndicate web page like: activities sheets with vocabulary, multiple choice and so on.
3. When the movies and activities are found library and student council can make cinema schedule and share it in the group on Vkontakte.ru social media channel.

¹⁸ "Established over 150 years ago, Cambridge Assessment operates and manages the University's three exam boards and carries out leading-edge academic and operational research on assessment in education." Source: <http://www.cambridgeassessment.org.uk/about-us/>

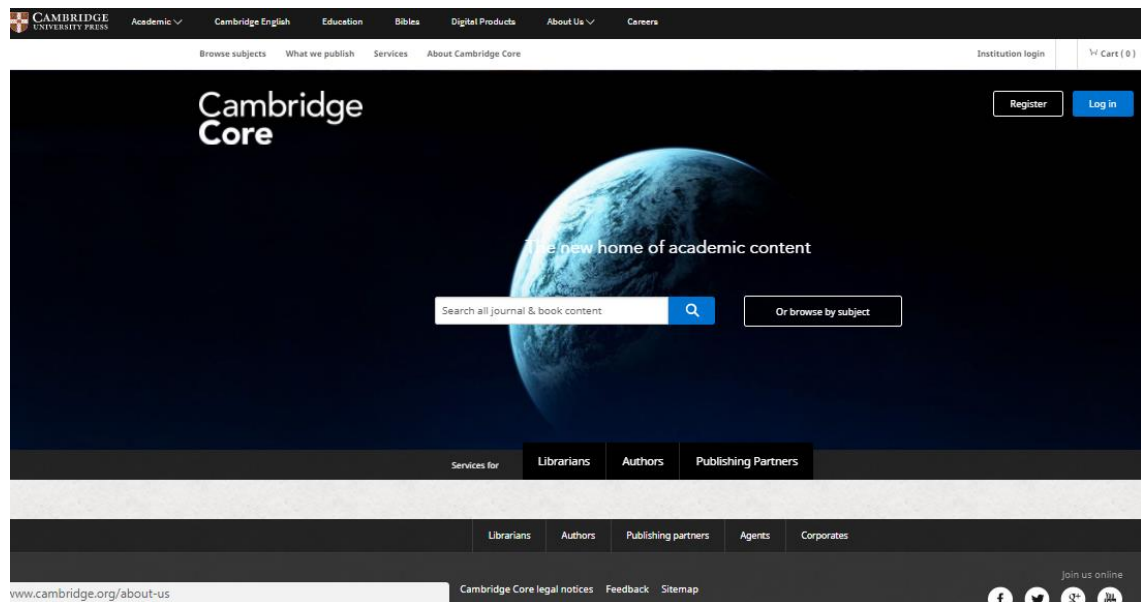


Figure 21: Cambridge Core database (Source: <https://www.cambridge.org/core/>)

These sessions can be called “Watch and learn cinema”. It is important to make these sessions interesting, because not many students would like to learn in their free time. So, the session flow can be easily conducted like following:

1. The students’ council member presents the movie.
2. After that she/he hands out the activities papers and explains the activities. The type of activities:
 - a) fill in the gaps with the right words;
 - b) find the write synonym, you have heard in the movie in the scene “when A explains something to B”;
 - c) True or false sentences.
3. Students have time to read the activities and ask the questions if needed.
4. Watching movie and completing the activities.
5. The student council member hands out the sheets with the right answers. Students assess themselves.
6. Final movie discussion, feedback round.

It is important to denote the fact that completing the activities is not obligatory, though participating in the final discussion is more than welcome. The session moderators are the students as well, as they are not teachers the activities assessment has to be conducted individually. At the end of each session students can share their impression about the movie and possibly ask each other questions on activities. Feedback

round after the first session is very important, as like this the sessions can be improved in the future.

3.3.3 Testing the “Posttraumatic military syndrome” event in students’ focus group (15.06.2017)

Before presenting the project to the audience it is important to test the ideas and collect the feedback. As the following project is conducted together with the students and some professional staff already from the beginning it was possible to observe students’ behavior. During the whole Design Thinking process the design team created and developed three ideas: new library organization plan, “Posttraumatic military syndrome” event and library cinema sessions event. Basically, the event ideas can be tested easily, as they don’t demand extra costs. These ideas are also interdependent. It means if you first change the library space it will allow to prolong the open hours and conduct events. This concept is difficult to test. Of course, it is not allowed to change anything in the library before it is approved by the authorities, which takes a lot of time. Therefore, during such a small period it is impossible to implement all the ideas, which demand much effort. Nevertheless we can still present it the audience and explain its benefits.

Within this project “Posttraumatic military syndrome” training event was tested. The training was conducted on July 16, 2017 with the help of Oksana Gritsuck, who directed the students’ focus group. We could test the prototyped script on pages 59-60 of this paper. There were many students invited, that’s why some of them took part in the training and the others could observe it.



Figure 22: „Posttraumatic military syndrome “ test session

The training itself was conducted on a high level, as it was designed by a professional. Students could not only do the paper tests, but move a lot, work in groups and tell stories. The training was conducted in the Russian language – the mother tongue for the participants. Of course, it was important to understand whether the library space could be appropriate for such an event. The library space got reorganized for this event. There were 16 students, who participated in the active training. The observation showed that it is enough space for the trainees. So, the events can be surely conducted for 15-20 students.

At the end of the students' training 32 feedback sheets were received. Even without it we could observe a very positive atmosphere in the room. Students looked very interested and involved. There are following questions which were included in the feedback sheet:

- Do you find the idea of "Posttraumatic military syndrome" training good?
- Would you like to participate in the future?
- Is there anything would you like to change?
- Do you find the idea of conducting this training in the library good?

According to the student's feedback, 30 students, who find the training successful, 25 students would like to participate in it in the future. 5 students would like to change something in the training. Finally, all the students (32) find the idea of conducting this training in the library good. So, the feedback shows positive results of conducting the training in the library.

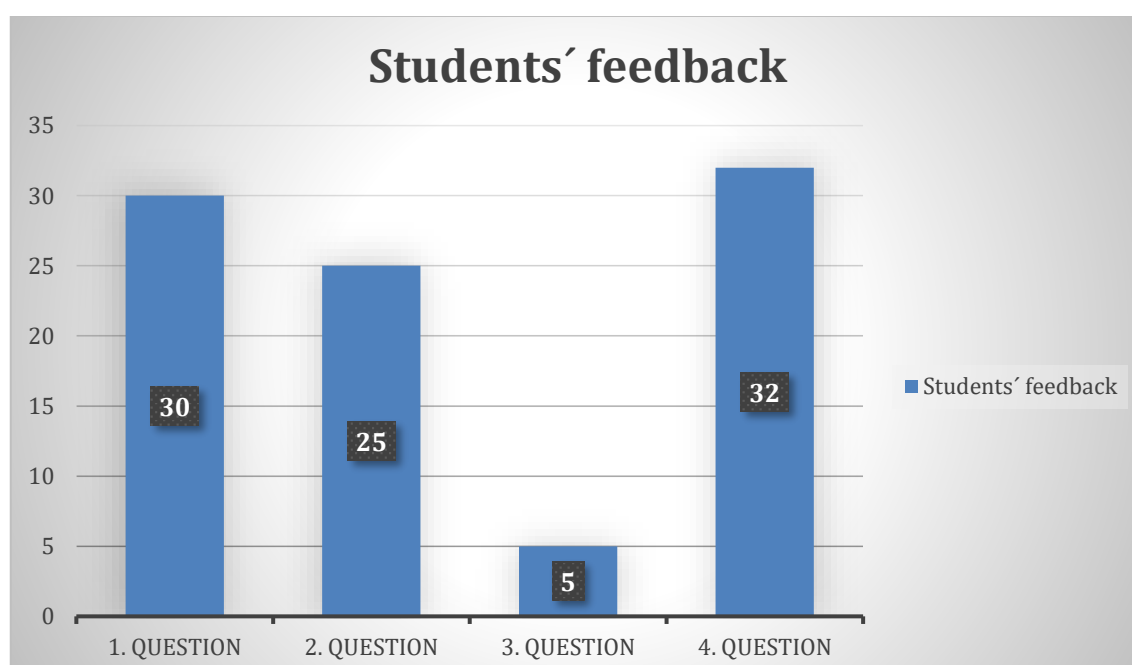


Table 22: Students' feedback

3.3.4 Final project pitch

The design team had the opportunity to present the Design Thinking project to students and staff on July 10, 2017.



Figure 23: Final pitch 10.07.2017

At the final pitch the design team with the support of Professor Yulia Gordienko explained the aim of Design Thinking project in the Academic Library of Horlivka Institute for Foreign Languages. It was important to present the project to a big audience of the Institute, as the positive feedback in this case defines the future development.

Within 8 weeks the design team under my instructions tried to figure out the problem of weak library attendance. The team went through three phases of Design Thinking project: inspiration, ideation and implementation. With the help of this technique the design team could analyze the situation in the Academic Library and not only define its problems, but find the solutions too. There are three designed concepts on the following issues:

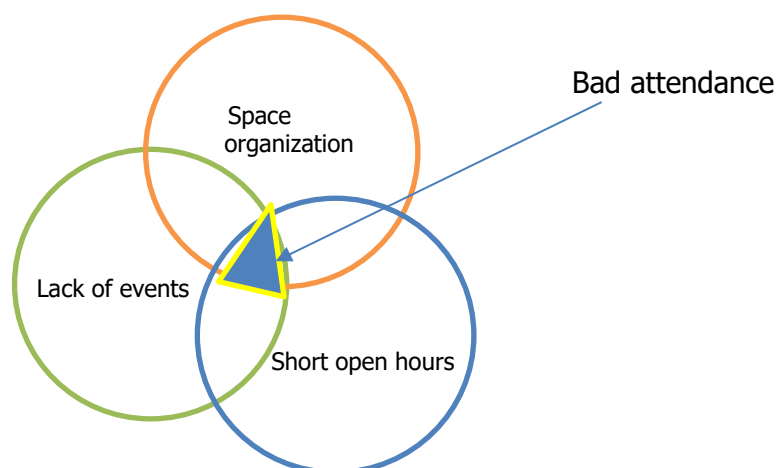


Figure 24: Connection between the issues

Throughout the research it was determined that all these issues relate to each other. That's why the whole concept shows how step by step it is possible to solve the problem of poor library attendance. First the design team tried to change the concept of library organization and divide the space into several working zones, which could allow the students to do all kinds of work at the same time. Second the team worked on the design of the most appropriate open hours. And third it made such events, which could be conducted in the Library.

All this was made in order to change the Library concept and make it more useful and fun for students. Through the active work with the students and some professors it was possible to improve the communication between the Library and its users.



Figure 25: The design team together with Yulia Gordienko, Oksana Grizuk and other students, 10.07.2017

Our final pitch was positively accepted by the audience. It was a good idea from the very beginning to work with students. The power of word of mouth brought its benefits in this case. It was known from the beginning that other students at the Institute are very enthusiastic about the project and really wait for the end results. Moreover, with the help of professors Yulia Gordienko and Oksana Grizuk our concept worked well at the Institute. Hopefully it will be implemented in full in the near future.

4 Conclusion

The purpose of this paper was to work out the ways of enhancing the level of library services at the Academic Library of Horlivka Institute for Foreign Languages, an internally relocated (because of the military conflict in the east of Ukraine) institution of higher learning in the situation when the library resumed its activity from scratch and renewed its facilities with the help of an international grant. Non-traditional Design Thinking methods for solving the problem of poor attendance of the library were used in order to find the best ways to increase the efficiency of the library services. Within eight weeks of the project the design team worked on defining and solving the problems of non-available borrowing service, short opening hours, wrong library space organization and lack of events associated with the library, which influence the library services negatively. Such an approach determines both the relevance and novelty of the work.

The following hypotheses were put forward and had to be confirmed or disproved:

- Poor attendance is caused by poor performance of the library services.
- Design Thinking methods as a problem-solving approach can help enhance the library services.

In the course of the discussion three main problems which prevent students from using the library were distinguished as the key ones and analysed. The first is the library space organization; the second is the short opening hours and the third is the lack of library events. In the given case the design team worked on each problem separately bearing in mind their interdependence.

It was also found out that the team could carry out each step of the Design Thinking process appropriately. The positive feedback shows, that the following ideated solutions - new library space organization with specific zones, flexible library working schedule, such events as "Posttraumatic military syndrome" training and cinema club sessions - can be successfully implemented in the future. So the hypothesis – "Poor attendance is caused by poor performance of the library services" – finds its confirmation.

Design Thinking methods are truly human-centered, their primary aim is to create empathy at every phase of the project. That's why these methods demand group work, in the following case the students' design team. Following the DT workflow described in IDEO Toolkit for Libraries at every phase the design team consulted the library users,

cooperated with other people like field experts (in the following case other librarians and professors), this is how a team creates empathy and further the insights, which lead to innovation. Through the user's perception we could analyze the library services situation. There are many untraditional methods which worked beneficially, for example: Customer journey, Persona analysis, ideation brainstorming and associations. That's why the second hypothesis – "Design Thinking methods as a problem-solving approach can help enhance the library services" – is confirmed as true.

So, all the tasks of the study are fulfilled and the purpose of the work is achieved. Design Thinking project in the Academic Library is successfully carried out and will be definitely implemented by the authorities in the near future.

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Eidesstattliche Erklärung

Ich versichere, die vorliegende Arbeit selbstständig ohne fremde Hilfe verfasst und keine anderen Quellen und Hilfsmittel als die angegebenen benutzt zu haben. Die aus anderen Werken wörtlich entnommenen Stellen oder dem Sinn nach entlehnten Passagen sind durch Quellenangabe kenntlich gemacht.

Hamburg, 21. August 2017

Ort, Datum

A handwritten signature in black ink, consisting of stylized, cursive letters, is written over a horizontal line.

Unterschrift