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History And Importance Of Graphic Design

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History and importance of graphic design

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Abstract

This thesis is about history and importance of graphic design in different periods, from ancient times until today. The features inherent in different countries are considered. The techniques, basic methods for creating projects and computer software that designers have used are mentioned. In order to understand the importance of graphic design in our lives, it is considered from the side of ordinary people, how it manifests itself in daily lives and how it affects business. The thesis provides experiences of the author during work in the field.

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1 INTRODUCTION

I want to start my thesis with a quote from the vice president of design at Apple Inc., Jonathan Ive.

“We have always thought about design as being so much more than just the way something looks. It’s the whole thing: the way something works on so many different levels. Ultimately, of course, design defines so much of our experience.”
(Jonathan Ive, on stage at Worldwide developer’s conference 2013.)

Nowadays “design” has smashed the borders, and is hard to imagine the world around us without that word. Design is found almost in every sphere of human activity. It also regards, to type of art, called graphic design. We see it everywhere, on internet pages, in books or magazines, on banners in cafés or bars, even on advertising posters at bus stops. It is not only pleasant pictures; the idea is to create a visual communication environment centered around humanity. Design brings a combination of clarity and informational content.

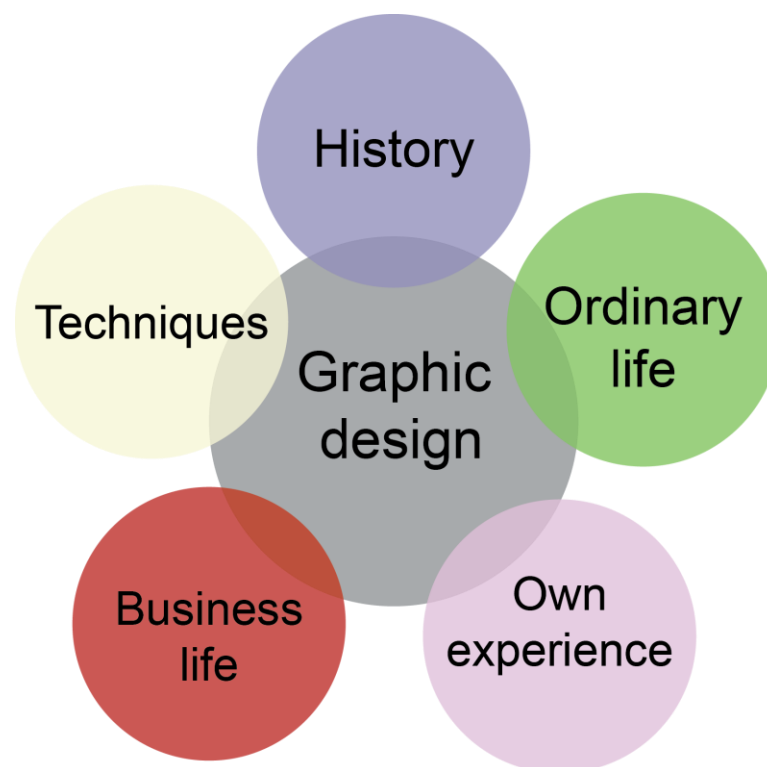
One can imagine being the director of the firm” X”. The goal of any business is make money; it is needed to attract customers. During this step it becomes a necessity to find a qualified designer to take care of the promotion and outlook of a product. If made it in the right way, people will see the idea and in their hearts comes a desire to buy. Hence the quote in the beginning. Graphic design can be called a part of science that covers such things as how to use analytics combined with imagination.

2 FRAMEWORK

This thesis concerns graphic design as a part of design.

**” Graphic design - is the art and practice of planning and projecting ideas and experiences with visual and textual content. The form of the communication can be physical or virtual, and may include images, words, or graphic forms.”
(Cezzar 2015.)**

Picture 1 shows the key parts of graphic design and where they can be seen.



Picture 1. Key parts of graphic design. (done by myself)

I will go through the history and put self-created examples that will show all styles from each period and make a decision about each of them, what was wrong or what can be used today, what comes from one decade to another, or what is gone. The timelines will be from ancient centuries until nowadays. Then some examples about creation methods and tools that used for creating and realization ideas, by hand and on the computer. In the end, the thesis considers how design may influence our lives, for example when we are starting to open a firm or creating a business. In other words, it considers why design is important for communication with people or customers.

3 HISTORY

Is so hard to say exact date when graphic design was founded. Most who are interested in it or work in that sphere think that it comes from ancient times, when humans started to draw pictures on the walls in their caves or when the first books were written.

Until the 20th century people had not used some specific word for their works. When first people was drawing in their caves, they did not imagine that today it will be a design; they just wanted to put something on the walls. Michelangelo's paintings on Sistine Chapel ceiling was called just piece of art.

In old ages things which one were related to art today can be called "graphic design".

The creator of the term "graphic design" was the American designer of advertising, William Addison Dwiggins. In 1922 he wrote:

"In the matter of layout, forget art and use horse-sense. The printer-designer's whole duty is to make a clear presentation of the message... This calls for an exercise of common sense and faculty of analysis rather than for art." (Dwiggins 1922.)

In my opinion the meaning of this quote is to show what are the keys elements in graphic design and how it should work. The thesis next turns to how design has looked during different timelines.

3.1 Middle Ages

I decided not to write about old ages because in that period, besides paintings on walls in caves and on stones, was nothing. I will go through more interesting period, the Middle Ages.

The first thing that came to mind during talking about art in this period is paintings of popular creators of Renaissance. However, I want to go deeper and see what else can be called graphic design. One can say that here was nothing else, but every country has had an army with its own symbols on their shields or emblems on flags. In my opinion that can be a design, because, in one picture, the national originality and traditions of each country are expressed. In the Roman Empire it was the double-headed eagle, originally created to show the rule of Cesar. During time some parts were a slightly changed. Picture 2 shows the own version of how it can be represented according to the styles of that time.



Picture 2. Two headed eagle (done by myself)

Another interesting thing that came from the Rome Empire is the Pantheon. It was founded by Marcus Vipsanius Agrippa. In the beginning it was two different buildings that were destroyed. The first burned down in 80 CE and second by lightning in 110BCE. It is interesting because of the letterings on the front wall in Latin, meaning “Mark Agrippa made it” (Cartwright, 2013.)



Picture 3. Pantheon (Source: www.fresher.ru)

These letters show that when the author wrote them, he already had his own font style. If we take, for example, the symbols “A” and “C”, we can see that they are made in one style. The spacing between the letters, their height and length are also the same. The symbol” O” is on the same line as the center of roof, meaning the author took care of placing an object on another. Because of that this work can be fully related to one of the most popular forms of graphic design, called Calligraphy.

According to these examples I can make a decision that in the Middle Ages graphic design was not like it is now, the separate part of fine art, but despite that we can find it in some things done during that period.

3.2 The 20th century

The key moment of developing graphic design in the 20th century is actually not from that period; rather it stems from the industrial revolution in the 18th century. Before that products were handmade, were expensive, had different quality and were produced in small amounts. In the industrial world came huge changes. New factories were opened. New technologies making serial products arose. New companies made huge amounts of new products, and for them came the need for promotion things. In another words, people started to think more about marketing.

I will write about how it was in the Soviet Union. I will write about the principals and styles in Russian graphic design. Then I will write about the same aspects in other countries.

3.2.1 The Soviet Union

First of all, I want to write about graphic design in the Soviet Union in the 20th century, because it is an interesting part of history.



Picture 4. Revolution poster (Source: www.krasnoyeznamya.ru)

The huge influence of making posters was done in the revolution in 1917, when the working class took off the old government and started to create a new society.

Picture 4 shows an example of a poster that was made by the government and placed in public places. It shows the influence on social life in the Soviet Union; that is why we can see the huge amount of red colors and the huge letters, representing coordinate changes

in Russia. The main idea of the government was to increase manufacturing and create a communist society.

The painters took inspiration from abstractionism, suprematism and constructivism.

The first is "non-objective art" expressing the internal state of a painter, by using abstract forms: lines and spots that also concentrate on selection colors and geometric forms. (Houghton Mifflin Company, 2005).

The second was invented by Kasimir Malevich in 1915. The idea of it is to make a visualization of philosophic things by using geometric objects. (Oxford University Press, 2016).

The third was invented by Vladimir Tatlin. The main point is to go away from the characteristics of an object and take only construction and form. (A. Turl, 2015).

The huge influence on graphic design was done by series of posters done by Okna ROSTA in 1920s. They create a simple picture, done in two or three colors with big silhouette. They were created, because in this period in the Soviet Union there was not a lot of social media, that were available for most amount of people in the country. (Okna satiri rosta, 2016.)

In the 1960s the points of view changed, and information in posters were orientated towards functional and aesthetic qualities of products for masses. Because of that the need for design in the Soviet Union expanded.

Finally, design as it is coming to Russia in the end of 20th century, when the Soviet Union disintegrated and became new companies and cooperation with other countries. (History of Russian art, 2006-2016).

3.2.2 In other countries

In the middle of the 20th century the Second World War covered all of Europe. When it ended graphic design became the new trend. Because of the developing entertainment industry and opening new firms, designers became more valuable. Great examples are the developments of the automobile industry and the film industry. The manufacturers had the need for promoting their products through posters and advertising in newspapers or magazines. The music industry also was developing, and musicians were needed in covers for their albums. Graphic designers became full-time employees just like other people. One of the important moments was the rise of pop art. It was founded in London by Richard Hamilton and Eduardo Paolozzy.(Art factory, 2016.)

The definition of pop art is – “popular, transient, expendable, low-cost, mass-produced, young, witty, sexy, gimmicky, glamorous, and Big Business” – stressed by its everyday, commonplace values. (Watkins,2014.)

It was popular in Britain and the USA. One of the most popular examples is the picture of Marilyn Monroe made by Andy Warhol.



Picture 5. Marilyn Monroe (Source:www.moma.org).

This was done 1967. Warhol invented the new technique for creating paintings. Each image here was printed from five screens: one that carried the photographic image and four for different areas of color, sometimes printed off-register.

Another important moment is that in the second half of the 20th century people invented computers. Progress in that sphere increased rapidly, and during the 1990s the video games industry was born. New opportunities for design in this area opened. The internet was also invented during this period, opening new ways of using graphics for web sites.

3.3 In 21th century

We are now living in the century of information technologies. Mass media is everywhere, on the internet, on TV, and in newspapers and magazines. All of this develops advertising. Became possibility to find the information from different sources. Considering these factors the need for companies to pay attention to marketing has grown. Design is increasingly intertwined with it, and this becomes an indispensable part of the development of companies.

Due to the development of computer technology there are certain programs that help designers to create and record their projects. They can easily share experiences with each other and, therefore, become new trends and mainstreams. There are new areas such as web design and the design of computer games. Because the 21th century started not many years ago, I want to write about what web design is, game design, and then about certain trends that are in the graphic design industry now.

Web design is a process of conceptualizing, planning and building a collection of electronic files that determine the layout, colors, text styles, structure, graphics, images, and use of interactive features that deliver pages to site visitors. (What is a web site design, 2014.)

At the time when the internet had just been invented there were just black screens with letters, there was not any kind of illustrations or pictures such as those on internet pages now. During the time, the area of internet technologies was developed and along came new tools for making web pages. There are coding programs such as JavaScript, which was used for making popup windows and also helps to rescue from html cliché, but then it was replaced with CSS. These programs were not enough: designers wanted to have absolute freedom in the working process. For example, they wanted to put different shaped objects of pictures or frames and so on. The most important step in web development was in 1996 when Flash came to be, but after some years it was not enough. In 2010 Ethan Marcotte coined the new term "Responsive web design". The idea of it is to use one content but with different layouts for design.

Become of new web sites that help with constructing web pages, designers do not need to think about coding any longer. If paying attention to the development of mobile technologies most people in last years are using the internet from them phones or tablets. These web sites help to serve the bugs or errors with displaying the site on the phone or tablet screen. (S. Ruluks, 2014.)

Video game design is rooted in the 20th century, when in 1952 A.S Douglass created the first game called OXO. The Cambridge computer as the part of research on interaction between computer and humans was also developed. The history of developing games started in 1977 when Atari invented the first game console. The games were flat. With more fiction words they were made with two planes, X and Y. The designer part of creating these games were to draw the environment used in the gaming process. During the progress in computer technologies games became 3D (three planes X, Y, Z) and looked more complex. Designers no longer needed to make only the environment; they also needed to create a cinematic part of projects. (Video game history timeline, 2016,4-26.)

4 TECHNIQUES

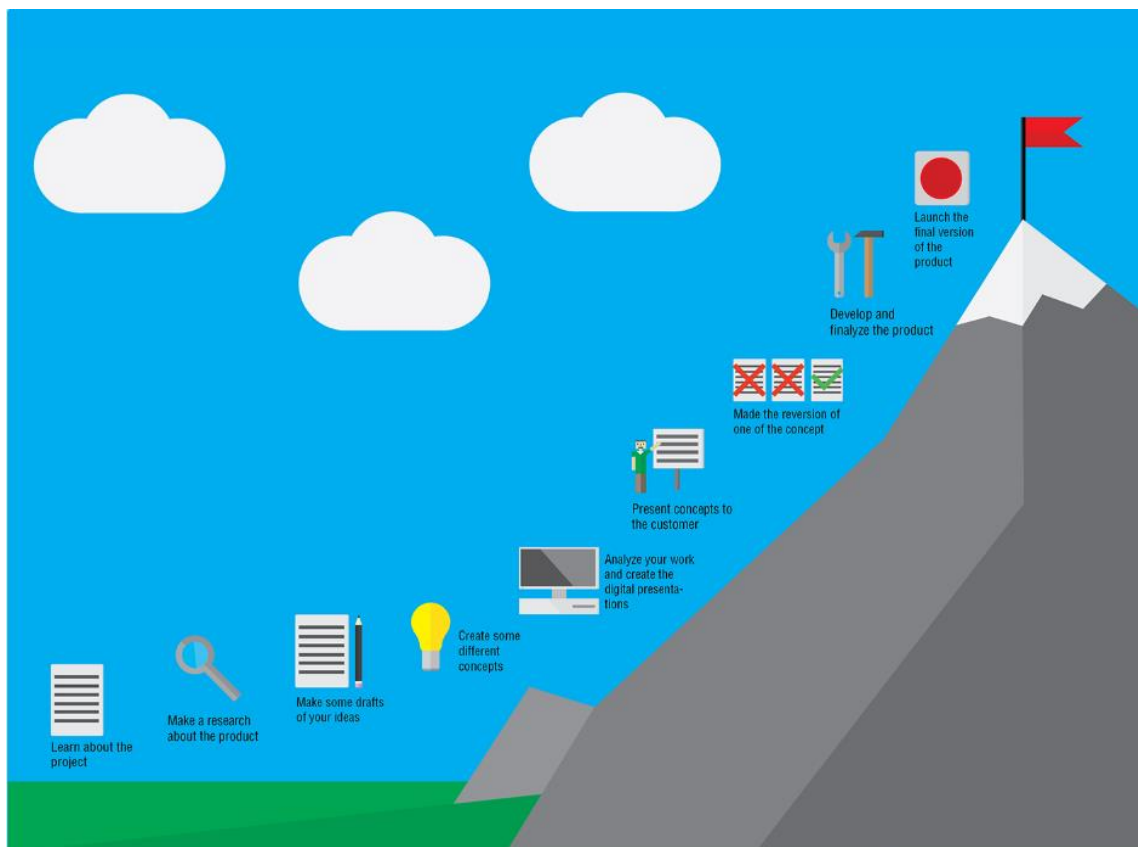
In this part I will go through and see what kinds of techniques are used by designers. I will talk about the basic creation methods and then about computer tools.

As well as in other areas, design has its tricks and approaches to the creation of objects. It depends on the designer's responsibility and experience; it is a matter of how much he delves into the project. Areas of skill may be seen in approaches applied to a particular project. One of them can spend, for creation a product, a few days, while others can make it during weeks or months. As I stated before design may be called a science, and people working in this area represent through the quality of a project their knowledge. The following is a quote that in my opinion represents the importance of creation techniques.

“Design is one of the few disciplines that is a science as well as an art. Effective, meaningful design requires intellectual, rational rigor along with the ability to elicit emotions and beliefs. Thus, designers must balance both the logic and lyricism of humanity every time they design something, a task that requires a singularly mysterious skill.” (Millman,2007).

4.1 Basic methods

In this part I will go through tools that designers use during the creation of their objects. First of all, I want to put down a visualization made by myself and describe it. Most people have used this method nowadays. If talking about a time when computers did not exist, they made presentations by hands. The idea represented on this picture, is to start making any project, one should deeply explore the aspects of it, what the customer wants and does not want, in another words designer should make an in-depth analysis. The next step is that they need to make a “sketches” of ideas and present them to the customer, and they will say what he likes. Then” sketch” that they selected should be developed further, and after all designers should make the final version of the product and present it again. This working plan is the base for all kind of projects. By using the picture what I putted upper we will go throw rules of creation products.



Picture 6. Rules of creation products (done by myself)

First thing that picture should clear bring idea for humans, in it cannot be a lot of elements that may create mess, because they close the right information and the consumer's attention will focus on unnecessary things and he will miss the essence. It is very important to give the value selection of colors, they must be combined with each other, and should not be too much press on eyes. Important things that are the heart of the image must be at the highlighted, in my case I made it by using red colors and flag on the top of mountain. For making picture more realistic and not flat, should pay attention to the use of shadows. The most important is the approach to alight properties of object, they should look proportional to each other, then they will be combined with each other. Of course, many people use the so-called “anti-symmetry”, but it works only if the image has a little bit objects, otherwise it will be messed. There were techniques for creation a graphic design. (Chavanu, 2014.)

4.2 Computer tools

Today graphic designers make, most of all their works, on computer. Because nowadays are a lot of different software that helps to create projects. In our time is very high demand for font design and web sites. For it were created drawing tablet. History of it starts from 19th century and was called Telegraph, but it was very rough. The popularity of them become in the 2001 when Bill Gates present Compaq tablet PC at a tech fair. For designers come the opportunity to make their drawings in digital format. They do not need any more drawing by hand and then scanning. This tool is used mostly for creating handwrite fonts or hard geometrical forms that takes a lot of time if draw by mouse. But for using their fonts it is not enough just to draw, because it is only picture. For using them on computer they should be programmed. (Sympdpimp, 2013.)

For that reason, were created PostScript by Adobe. The computer graphics creates from simple lines, curves and dots, but people see only the final result. There is another format for fonts that called TrueType. It uses mostly in Windows, operation system provides them for software like Word and PageMaker. One of the problem that some people makes the fonts in wrong way, they make mistakes with size or spacing and their font display on monitor incorrectly. For professional font programming needs a special software. One of the popular redactors are Font Lab, Fontographer and FontMonger.

Another important tools are Photoshop and Illustrator also created by Adobe. First one is used mostly for photo editing and making drawings in raster format. Second one for creating objects in vector format.

- Vector Graphic – a computer image that is stored in memory as lines rather than a series of dots, allowing it to be rotated or proportionally scaled. (Random House, Inc. 2016).
- Raster graphic -a computer image that is held in memory as a series of colored dots in a grid, each dot represented by one or more bits. (Random House, Inc. 2016).

From that definitions we can see that the main difference between those two different graphics formats is that vector throw scaling don't lose the quality of picture and can be

printed on all paper sizes, for printing raster graphic you need to make it for certain paper size.

The last tools what are also is important are 3DSmax and Vray. They are used for creating 3d objects and then makes a photorealistic visualization of then. Designers can make prototypes of their sketches of objects without spending extra physical materials like plastic, wood or metal. But this software mostly orientated for digital artist whose create animations and motion graphics.

5 GRAPHIC DESIGN AS THE PART OF MODERN LIFE

I this part I will talk about influence of graphic design on society.

” Modern design becomes the eye catcher because it's out of context, it is something newborn and fresh, something people have never seen before. I mean, that in itself is the way we should sort of stimulate the senses of society, this urban condition. “(Lovegrove, 2008.)

In modern society, design has become one of the important parts of it. More and more people are turning to designers to create for them a beautiful and practical thing. Thanks to this modern world looks very different. Everywhere: in the store or the subway, magazine or brochure, a sign on the street or poster at home, everywhere is found the contribution of the designer.

V.F Runge says that humans brain in process of life receive more than 80 percent's of information by visual analyzer, in another words by eyes combined with certain parts of the brain. (Runge,2006).

The quality if interaction depends from how the object placed in environment. When human looks straight on the picture he sees the whole object, but if he looks under different angels, some information can be missed. According to that the main point from picture should be legibly seen from different angles.

5.1 In business life

In the 21st century, graphic design has become one of the most important ways of communication with people.

Trying to imagine example, I will take the most ordinary thing which can be found in all parts of the world and at which all people periodically visiting, this is any restaurant.

Design starts with signs on the street and ends with a booklet for bill. All of the objects of this space had aims to show for people how much this place individually or refers to the certain culture. Visitors starts to have sympathy for this place or they begin to understand orientation of this place. Another important moment is menu; people like it when they do not need to spend a lot of time for seek information what they need, pay attention on how it clears for understanding and how it is composed.

Another example is Facebook launched by Mark Zuckerberg. All people around the world use this social network, but why? There are a lot of different projects that provides the same idea. It was founded in the middle of 2000s and were more comfortable than email.

The answer is that developers team a care about. During the years they always brings new internal interfaces that makes it more comfortable to use, most of them are regards to service design. Another reason that they also care about outlook of their pages. In last years they updated their design of all services, because of changes in mainstreams of web design.

From this we can understand that the basis for the business is creating own style. Creation process of it called” branding”. The company owner comes to designer and asks him to make visualizations that represents idea of the firm. Approach to this question you need to rely on creativity. The most important step regards to web site and logo. The goal is present the product, for certain audients, show all functions of it, this is the main thing for making money from it. The image can say more than just words. How serious is the firm care about their design says about their serious intentions, bad design will scare away

customers and good attract to them? There is list of common problems that they may have:

- First, is to find high qualified designer who's can make professionally his work.
- Second, more common, is that the company in the order of graphic projects cannot clearly say what they want, their ideas are may changing all time
- Third, many companies do not want to spent a lot of money for design. The reason of it, is that in the beginning they not have a huge budget.

(Clarke ,2014.)

5.2 In ordinary life

Previously I was talking about the meaning of graphic design from business side. Now I will talk how it make influence in our everyday life.

If take a look on the Windows 95 made by Microsoft in 1990s. When it becomes people though that design of interface is well done and were easy to use. Few years ago came new version of that product called Windows 10. If compare them, we can see that people do not like the old version. It means that changes of the product sets new rules and creating things and as a consequence affect, change people's lives.

That is why in present time, more and more people begin to relate to the design more seriously, due to the abundance of different companies offering high-quality, beautiful and different products, every time become new trends and fashion. All designed things serve us every day; it also regards to graphics.

Can be defined three steps how the people cooperate with information:

1. First, creates cooperation tools throw posters, logos or slogans on shop windows, house numbers, printed routes of transport in bus stops and so on.
2. Second is visual communications inside of houses, it may be signs, advertisements, screens and other mass media.
3. Third, is cooperation with tools, like computers and smartphones.

(Runge, 2006,192-193.)

Based on these ways of obtaining information from a person forms a definite opinion about offers what provides for them, begins human interaction with the design of surrounding objects. Because of that, today people start to think about what they should choose.

In 2007 the Washington Post made an experiment with famous violist Joshua Bell. He was playing on a busy street, dressed in ordinary clothes. After approximately one hour only few people were listening him. This means that representation of work means a lot for acceptance by humans. The goal of the designer to attract an audience by making a certain project. The hardest thing is to define the society's needs. But if we spend a lot of time on research, success will be guaranteed. This example shows how important to think about what people want. (Merzlyakova, 2016.)

6 OWN EXPERIENCE IN GRAPHIC DESIGN

In this part of thesis, I want to write about what projects I have done. In four years of studying I learned different types of design: industrial, service and graphic. For myself I have chosen creating visual communications as the main way.

The reason is that people in our modern world in the last 20 years have been trying to make life easier. People use computer technologies as the instrument for creating new tools for life. The easiest way for people to communicate with people is via the internet.

If somebody needs any kind of information, he or she does not call to help service, or starts to find something from newspapers or magazines. They just turn on a computer or smartphone and go to the internet. How well the information is provided affects how quickly they will get what they want. In this case, who provides it will not be able to escape from graphic design. That is why I am interested in it.

Another point of this part is to analyze and compare my works with different styles that I had mentioned in Section 3.

6.1 Examples of works

The first example work is a poster with the phrase “forget old, create new”.



Picture 7. Forget old create new (done by myself)

I have done it as a practice with making printed material. It was done in Illustrator and then final effects like shadows were done in Photoshop. The idea of it that in upper part is style that is now one of popular, called minimalism. On the lower side are some small paintings comprising a mix of different colors. If we compare this with the upper part, it looks much more colorful and unfamiliar. The phrase “forget old” is written in standard font, while the lower sentence is composed of a repeating random lines; this technique also creates the impression of strangeness. The combination of these techniques complements the fundamental difference between the backgrounds, which also symbolizes major changes. The art style of this poster can be defined as post modernism, because of pattern in the lower part. If I were to take it away the whole picture can be described with minimalism. It has a lot of simple geometrical fonts and flat letters.

I think this kind of work may see not only in 21th century, also it will be looks perfect in the 1980s, but it will be mostly adapted to pop art style.



Picture 8. No pain no gain (done by myself)

There is example of poster that done in style of typography in period after second world war. I am interested with combining different fonts and here is result. Idea of phrase in that project was that without motivation you will get nothing. Barbell is object that represents main instrument for gaining muscles, but if see from another point it may have a figurative sense, like make all hard work to get result. Font and colors are typical to American posters style. It also may be dedicated to period of cowboys, because of brown color, font with huge shades and cut corners of the white frame.

Last example is Website about myself.



Picture 9. Own web site (done by myself)

It was experience with web design. During imagining the outlook of that page I tried combine the photography with geometrical objects. Today method of using photographs for creating web pages is common in modern design. But the hardest thing was to make good picture without professional studio. I decided to choose the black and white colors because it is one of the smart color combination for serious things like logos and brand outlook. In top of page located navigation bar that consists of 3 links: “home” (current picture), “works” (representation of projects what I done) and “About me” (short text that consists of who I am, what I am doing ad for what I done this site). It is very hard to say to what style it belongs because web design, as it is, come during last 10 years. But I can say that it is goes to minimalism, because of blank background, simple shapes and fonts.

7 BENEFITS FROM WORKING ON THE TOPIC

While working on this topic the author had to read a lot information from different sources such as web pages and books. This included learning about the history and importance of graphic design. The knowledge obtained made a huge influence of my working process and the final results of projects I worked on. I learned a lot of theoretical matters about creating things as well as practical ones about using different tools.

The understanding of the importance of graphic design grew. It is a very old part of art. It is not only just creating smart pictures; it is a very massive and deep process, and the final result is just a representation of what I got while thinking about a certain topic, in more simple words, graphic design is the way a way of presenting complicated information that will simplify the understanding of it.

Working on this topic brings me the possibility to use my knowledge in the future during at work. I am glad with choosing graphic design as the main sphere for my work. I got the experience for create my own works. With the gained experience I got the possibility to discuss graphics with other people.

8 CONCLUSION

After all that have been done in the process of working on the topic I can make a conclusion.

During the times it was developed. In the 20th century a lot of revolutionary solutions popped up. Russian Design was vastly influenced by Soviet authors. In the world Pop art changed coordinal peoples understanding of things. For a hundred years, there has been much more significant events than in the entire history of mankind.

Now I can say that it is very important to modern society. Below I want to give you facts that I found on what graphic design affects.

- Business life.
- Marketing
- Culture of creating web pages
- Culture of creating posters
- Culture of people everyday life

From this we can conclude that design affects our lives in all spheres. It sets the fashion, the new standards. And he should pay attention despite the fact that we do, whether it's the style of the firm or regular poster which will hang at home on the wall.

REFERENCES

- Cartwright, M. 2013, Pantheon. <http://www.ancient.eu/Pantheon/>
- Cezzar, J. 2015 What is graphic design. <http://www.aiga.org/guide-whatisgraphicdesign/>
- Chavanu, B. 2014 5 basic principles graphic design take granted every day. <http://www.makeuseof.com/tag/5-basic-principles-graphic-design-take-granted-everyday/>
- Clarke, C. 2014. 6 Reasons Graphic Design is More Important to Your Business to think. www.business2community.com/branding/6-reasons-graphic-design-important-business-think-0928602
- Dwiggins, W. A. 1922. What is graphic design, 10.
- History of Russian art. 2006-2016. <http://www.bibliotekar.ru/istoria-iskusstva-russia/16.htm>
- Houghton Mifflin Company, 2005. Abstract art. <http://www.dictionary.com/browse/abstract-art>
- Ive, J. 2013. Worldwide developer's conference. <http://www.businessinsider.co.id/jony-ive-quotes-on-design-and-apple-2014-6/#CrawymH7uIEZpm0T.97>
- Lovegrove, R. 2008. <http://edition.cnn.com/2008/TECH/07/24/lovegrove.interview/>
- Merzlyakova, V. 2016. How design influences our on perception. <https://lifehacker.ru/2016/07/11/dizajn-i-vospriyatie/>
- Milmann, D. 2007. How to think like a great graphic designer. <https://www.goodreads.com/work/quotes/415342-how-to-think-like-a-great-graphic-designer>
- Okna satiri rosta, 2016. https://ru.wikipedia.org/wiki/%D0%9E%D0%BA%D0%BD%D0%B0_%D1%81%D0%B0%D1%82%D0%B8%D1%80%D1%8B_%D0%A0%D0%9E%D0%A1%D0%A2%D0%90
- Oxford University Press, 2016. Suprematism. <https://en.oxforddictionaries.com/definition/suprematism>

Pantheon, picture 3

http://www.fresher.ru/manager_content/images/progulka-po-panteonu-v-rime/big/4.jpg

Pop art –the art of popular culture, 2016

http://www.artyfactory.com/art_appreciation/art_movements/pop_art.htm

Revolution poster, Picture 4.

http://www.krasnoyznamya.ru/gallery/rm_6_277.jpg

Ruluks, S. 2014. A brief history of web design for designers.

<http://blog.froont.com/brief-history-of-web-design-for-designers/>

Runge, V. F. 2006 History of design, science and technology, 192.

Sympdpimp, 2013. History of the drawing tablet.

<http://www.slideshare.net/sympdpimp/history-of-the-drawing-tablet-22824024>

Turl, A. 2015. Constructivism: The Avant-Garde and the Russian

Revolution. <http://www.redwedgemagazine.com/online-issue/constructivism-notes-on-art-revolution>

Video game history timeline, 2016, 4-26.

<http://www.museumofplay.org/about/icheg/video-game-history/timeline>

Warhol, A. 1967. Marilyn Monroe, Picture 5.

<http://www.moma.org/collection/works/61240>

Watkins, J. 2014. Pop Art. <https://prezi.com/9cqwy4g0grtp/copy-of-pop-art-visual-aid/>

What is the web site design, 2014.

<http://www.networksolutions.com/education/what-is-a-web-site-design/>