

# The Online Journal of Communication and Media

Volume 3 Issue 1 January 2017

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Sakarya-Turkey

Published in TURKEY



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### Dear Colleagues,

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# ARE OUR UNIVERSITIES READY FOR THE CHANGING WEB USER PROFILE IN EVERY ASPECT?

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### ABSTRACT

With the widespread use of the Internet and the proliferation of services offered over the Internet, the use of the web is increasing day by day. In addition, as a result of computerization and smart phone usage in recent years, young people who have been educated, and middle-aged and older people who use computers at work places frequently use the Internet environment. The gradual increase in the computer literacy rate is making a serious change in the current web user profile in Turkey. In this study, we investigated the situation of this transformation in web usage in the recent years and some tendencies towards the future are examined by going through various published statistics. Besides, the role of the universities in Turkey on this transformation and effect of this transformation on the universities has been interpreted.

Keywords: Internet Usage, Internet in Turkey, Web User Profile, University

### INTRODUCTION

The most important scaling tool for the effective transportation of the services provided in Internet to the recipients is to determine the user profiles and the habits clearly. When this determination once accomplished correctly, the users can be dispatched to a product or a service easily. It has been known that the large companies are implementing important data mining studies and high budget researches over this determination processes and the measurement of the consumer habits.

The web user profile can be described as an integration of demographical information like: gender, age, education, income status and technical information like: type of the using tool, browser type, connection and behavioral information like: type of entering the site, timing, course of action, shopping preferences. As a general approach, depending on the data type to be collected, the necessary user specifications are mostly tried to be gathered by not making understand the users as far as possible.

There are some web analytical tools for collecting information from outside of the site like: Alexa and Compete and from inside the site like: Google, Analycis, Yandex Metrica, Yahoo Web Analytics, Bing Campaign Analytics (Fırat, 2015). Several research companies publish global, state based or comparable reports about web users' general profiles yearly. In spite of these general reports, the determination of the user profiles for company base can be handled in a special effort for gathering special results. For this purpose, not only the surveys but also the analytical site or some special analyzing methods and software can be used.

In Turkey before this, several scientific studies have been accomplished especially on the Internet using of the university students (Dursun, 2004; Balcı & Gülnar, 2009) and social media using (Vural & Bat, 2010; Karal & Kokoç, 2010) for determining the types of the profiles and finding out the purpose of using them. But all across Turkey there is no big scaled research about analyzing web profile trends and the university factor together.

In this study, within considering the seemingly changing of the statistics across Turkey, a future projection of how the web profile change will take place has been analyzed. Besides, how this kind of changing is going to act the universities and starting with these days, what kind of studies can be done in the universities have been considered.

### THE STUDY

From 2004 till nowadays, the yearly published survey results' statistics (TÜİK, 2016) by the Turkish Statistical Institute (TÜİK) accomplished face to face with the individuals between 16-74 ages and the reports (We Are Social, 2014-2015-2016) that have been published every January in last three years by



the so called "We are Social" company that has headquarters in New York, USA both present the interchanging rate of the Internet using by years. In this study, the statistics collected from the TÜİK reports that state the household Information Technologies usage (tool types) and gender, age, education and the statistics of Internet use with the rate of utilization and the so called "We Are Social" company's statistics about Internet and social web using overall Turkey have been used.

### Usage of Information Technologies by Web User Profile

According to the researches made by TÜİK, in Turkey, what kind of household Information Technologies have been used and how they have been changed in recent 10 years were presented in Figure 1, the Internet usage depending on the gender types was presented in Figure 2, the Internet usage depending on the age was presented in Figure 3 and the Internet usage depending on education was presented in Figure 4.

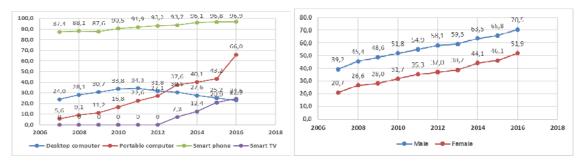


Figure 1: IT availability rates in households

Figure 2: Internet usage rates by gender

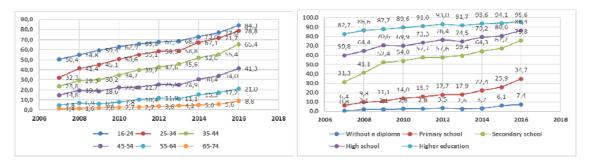


Figure 3: Internet usage by age groups

Figure 4: Internet usage by education level

In the statistics, the years in hand present that a little increase in number of smart phones, a constant decrease in number of desktop computers, and a substantial increase in the ratio of smart TV and portable computers (laptops, tablets, etc.). Besides, in Turkey as the computer and the Internet usages analyzed separately, it can be seen that the Internet usage is 10 points more than the computer usage. This has the result of a none computer using population that can have connection to the Internet of 10% by the widespread usage of Internet connection especially over the smart phones.

In Turkey, the usage of Internet depending on gender types has a constant increase, and the usage of men compared to the women is approximately 20 points more and it can be said there is no marked difference of the ratio in the usage by the years. As the age increases the Internet usage is getting decreased. The young population uses the Internet mostly, and it can be seen on the over middle-age group that Internet usage ratio is getting down. As the educational status getting higher, the Internet usage is also getting higher. The primary school graduated or the none-educated category of Internet usage is substantially lower than the other groups. This is directly related with the age groups over the Internet usage.

### **Usage of Internet and Social Network**

According to the so called "We are Social" company's published reports (We Are Social, 2014-2015-2016) the statistics about the Internet and the social media usage in Turkey have been given in Table 1.



Table 1: Internet usage rates in Turkey between the years of 2014-2016

| Parameter                             | 2014  | 2015  | 2016  |
|---------------------------------------|-------|-------|-------|
| Population (Million)                  | 73,90 | 76,70 | 79,14 |
| Urbanization Rate                     | 72%   | 73%   | 74%   |
| Number of Internet Users (Million)    | 33,40 | 37,70 | 46,28 |
| Internet Penetration                  | 45%   | 49%   | 58%   |
| Active Social Network Users (Million) | 36,00 | 40,00 | 42,00 |
| Social Network Penetration            | 49%   | 52%   | 53%   |
| Unique Mobile Users (Million)         | -     | 68,60 | 71,03 |
| Unique Mobile Penetration             | -     | 89%   | 90%   |
| Active Mobile Social Users (Million)  | -     | 32,00 | 36,00 |
| Active Mobile Social Penetration      | -     | 80%   | 86%   |

In the 2014 published report, as the "Mobile Usage" section could not have been calculated singularly, this values had not been presented. The numbers depending on the last three years show us that:

- In Turkey, the 72% of the population are living in cities and the urbanization rate is getting increased with average 1% in every year.
- The number of Internet users in Turkey are getting increased with average 4%-9% and got nearly of 60% of the population.
- Over than half of the population of Turkey use Internet and this ratio is getting approximately 2% in every year.
- In Turkey, over than 90% of the population use mobile phones and this ratio is getting approximately 1% in every year.
- In Turkey, the 86% of users are connecting the social networks by smart phones. This ratio is getting increased 6% in every year, and it is going to reach the saturating point in a few years.

### **Purposes of Internet Usage**

According to the data of Turkish Statistical Institute (TÜİK, 2016), the purposes of Internet using and the differences depending on the gender types have been given in Table 2.

Table 2: Purposes of Internet Usage in Turkey

| Purpose of Internet Usage  | Turkey<br>Avg. (%) | Male<br>(%) | Female (%) | MF.<br>Diff. |
|--|--------------------|-------------|------------|--------------|
| Participating in social networks (creating user profile, posting messages or other contributions)          | 82,4               | 85,0        | 78,8       | 6,2          |
| Watching video content from sharing services (YouTube etc.)  | 74,5               | 76,8        | 71,3       | 5,4          |
| Reading online news, newspapers or magazines   | 69,5               | 73,0        | 64,8       | 8,2          |
| Search for health related information (injury, illness, nutrition, etc.)                                   | 65,9               | 60,6        | 73,2       | -12,6        |
| Searching for information about goods and services   | 65,5               | 66,9        | 63,6       | 3,2          |
| Listening to music (including web radio)   | 63,7               | 63,9        | 63,5       | 0,4          |
| Upload created content (text, photos, etc.) to share with any website                                      | 47,0               | 48,6        | 44,8       | 3,9          |
| E-mail sending / receiving   | 46,3               | 50,8        | 40,2       | 10,6         |
| Internet phone / video call (with webcam)  | 41,3               | 41,1        | 41,6       | -0,5         |
| Downloading or playing games   | 40,8               | 44,5        | 35,9       | 8,6          |
| Obtaining doctor's appointment via website (health inst. or hospital etc.)                                 | 34,2               | 32,5        | 36,4       | -3,9         |
| Watch TV on the Internet (including live or missed programs)   | 33,7               | 34,2        | 33,1       | 1,2          |
| Internet banking   | 31,0               | 38,3        | 21,1       | 17,2         |
| Use online services for travel or travel related accommodation   | 20,5               | 23,0        | 17,0       | 6,0          |
| Sale of goods or services  | 20,0               | 22,8        | 16,1       | 6,6          |
| Individuals who store their personal documents on the Internet   | 14,2               | 16,2        | 11,5       | 4,7          |
| Using payment accounts (e.g. BKM Express, AliPay) to pay for goods or services purchased over the internet | 6,9                | 8,5         | 4,6        | 3,9          |
| Creating websites or blogs   | 3,3                | 4,0         | 2,3        | 1,8          |
| Watching video on demand (paid)  | 3,0                | 3,3         | 2,6        | 0,7          |



The data presents that in Turkey, Internet is being used as an entertainment tool instead of education, information or the other needs. In most of the purposes there is no difference occurring depending on gender types; the most distinctive differences are, the usage of Internet banking in men is 17.2% more than the women, and looking for information about health situations in Internet for woman is 12.6% more than men.

### **FINDINGS**

Because of the increasing population of the computer literate infants and children, urbanization, the cheaper widespread usage of Internet, the increasing number of services moved to Internet and becoming a necessity of using these kinds of services, the usage of Internet is rapidly increasing in Turkey like the whole World. Besides, in recent years, within the widespread usage of the smart phones when compared to desktop computers, more mobile users are using the services and the applications on web. So that there is a 10% group existing can be seen in the statistics as Internet users but not using computers.

### **Interpretation of Web User Profile Changes for the Future**

In the developed countries, the web usage ratio of men-women is approximately close to each other, on the other hand in our country the ratio of men is 20 points more than the women. Within a young population growing up with an equal ratio of man and woman, and in the long term, it is possible to estimate that the ratio of man and woman is going to get closer.

In our country and in the world, now, the young population meets the computer and Internet in early ages. The necessity of connecting to Internet for the middle age people is slightly less. Today's young and middle age group are going to be the middle age and the upper age groups in the future. Also within the consideration of the affect that Internet gets a higher participation in every part of life, it can be said the Internet usage in all age groups is going to get increased.

Also in our country and in the world, the level of education is increasing. Nowadays, when it is considered that Internet is being used by the secondary and high school graduated individuals, this can also, in the forthcoming years, get increased the Internet usage ratio of the middle and upper age groups. Besides, nowadays, when it is considered that because of beginning to use the Internet in primary school level, it is possible to say that the non-high school graduated individuals can use the Internet extensively. Web using is not only used by a specific group, more than that it was started to be used in every part of life by all the type of incoming levels of the individuals. In the future, it is estimated that this can be used more extensively.

When it is considered on the aspect of tools used to connect Internet; it can be seen that the connections made by smart phones, and tablets like mobile platforms are going to get increased. Within the IoT (Internet of Things) like approaches, and becoming the widespread using of mobile 5G and IPv6 like infrastructure technologies, in the forthcoming years, too many kind of tools like washing machines, cameras, combi boilers, refrigerators and security systems are going to connect Internet. Again in the forthcoming 5 years, within the transition from the human based Web 2.0 to machine based web 3.0, the tools are going to be able to act like users on the Internet.

### The Effect of Ongoing Transformation On Universities

When the issue is being considered in a broad perspective, it can be seen that changing web user profiles can affect the universities, and at the same time the universities can affect the web user profile changings. The three main purposes of the universities are; making scientific researches, as doing the researches contribute to social development and producing qualified work force. Besides, the universities need administrative and assistant processes to enforce their activities. The universities have the responsibilities of producing technology, the effective usage of it and spreading it to a large mass. It is estimated that the computerization and the Internet usage are going to take a bigger place in every part of life than today in the forthcoming years. In this context, parameters like the number of the computers that can be connected to Internet, wireless access points, the line capacities can be considered even for the universities as an indicator of development today.

The main resource for the universities in the input, process, output and feedback recycle is the human. Whether in the administrative and academic processes, or in the student centered teaching, the Internet



has become an indispensable tool. Today the students become computer literate and Internet users before starting university. In the teaching processes, making some of the examinations on web, homework assignments, internship issues like activities and registration to the classes, scores, transcript monitoring have become like necessities to be implemented on the Internet. Communication with the graduated students, gathering feedbacks from the shareholders and many of the functions handled in administrative processes can be executed through also with web.

The transition from formal education to Internet based education was a result of these like developments. Regardless of time or place, the distance learning comes forward on us as a new kind of education model. With the widespread use of the mobile technologies, it is expected to be a mobile application of every university in addition to its web site. Wide-spreading social media becomes a significant information sharing environment with the shareholders for the universities like the other institutions. The using of the web effectively in the transformation of the universities became an important fact to be taken care of by the strategical and administrative leaders of these institutions.

### The Role of Universities in Experienced Transformation

In recent years, in respect of the importance of information technologies for the nation, there has been a significant awareness occurred; in addition to this, technologically, several studies have been accomplished for the transition of leaving the consumer state and being a producer. As the information technologies have been prioritized in the R&D projects, the successful completion of the FATIH (Movement to Increase Opportunities and Technology) Project in primary and secondary schools, the administrative and the legal arrangements for cyber security, the mobile 5G infrastructure, the national operating system development like studies, can be considered as hopeful ideas based upon universities. In this field, whether bringing innovation to science with the studies accomplished, or the expectations for the benefit of creating qualified manpower, the universities have an important role in the widespread usage of the web and the interchanging point of the user profiles.

### **CONCLUSIONS**

It is expected that the universities as being on the focusing point of the scientific thoughts and the researches, are going to lead the transformation of the thoughts and the infrastructure that are needed by the society in the widespread use and the importance of the Internet. This transformation can be possible by showing more interest on notions like increasing the number of the web based services presented to the students, the expansion of the network connection opportunities, e-education, e-commerce, and e-management. For the widespread and efficient using of Internet whether in education or in other areas, notably the universities and Higher Education Council (YÖK) like governmental organizations must develop and apply nationwide policies. In addition to this, especially for the national production of hardware or software issues over information technologies, the universities must take prior responsibility and these like initiatives must be encouraged and supported.

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### DESIGN, DIDACTIC, SCENARIES OF CONSUME

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### **ABSTARCT**

The world is living in a situation at the edge of normality.

In line to an entropy transformation, design has got bogged to the edge of a process evanescence of the discipline, which informative grade was reduced to public messages that exalt each typology of trash that could be sold in commerce. The meaning of design has been deeply rooted in our culture so that it cannot be perceived anymore. We produce million of objects that satisfy our whishes and that generate needs. Such a big amount of things that evolves itself (Gold). An accelerated creative process that is destinated to implode on his own due to the effect of an already established aesthetic obsolescence that escapes to each rule of taste, including it in the concept of luxury what should be necessity.

It's design on demand, where everyone is able to elaborate customized objects; a software program will check the production process; technology will help to use tridimensional printers. The step from design to production is faster. The result: it's a babel of mass-media products (Codeluppi), of concept-objects describing a turbulent, invisible trajectory that embraces each thought-action, weak, changeable, local or universal. Symbolic objects, sensitive to the transformation of taste, for which it follows "the logic of abstraction of fluxes, [reducing the product to] a brand puts on the top of the other like a luminous writing to the mountains of product" (La Cecla). A planetary garbage Rem Koolhaas defines Junkspace. The result is a kind of visual pollution on big scale, that feeds on a supermagic design.

To adhere to a total aesthetic idea of the environment seems the last edge of a discipline seemingly without connotation, tending to a touchable material evanescence choosing to substitute the relation between shape-function with the binomy shape-sense. Nowadays design is conceived as structural aspect in the evolving project of the whole production sectors. It's business culture, capital of company (Bonsiepe).

Today the contemporary culture proposes the figure of the prosumer, that is the cosumer-producer able to suggest business strategies systems of products oriented to the mass customization of the manufacts (Dorfles). To reach semplicity in design is a must. The good design doesn't originate from an order, but from a series of questions.

To develop ideas and realize products requires a rigour of project and ethic behavior that goes beyond the commercial slogan that pass polluting products off for design. This rigour and ethic imposes to designers, engaged to be freelance teachers, to rethink the creative act as the responsible action that tends to slow down simple illusion disadvantaging to think of the consequencies that a unihinibited planning produces on the determined physical environment and on human behaviors.

### INTRODUCTION

The world of design is living in a situation at the edge of normality. It is as if it has forgot its own roots and the original principle according to which designer must take care of the environment created by the human being, trying to improve it and transfer it to the future generations. In line to an entropy transformation, design has got bogged to the edge of a process of 'evanescence' of the discipline, whose informative grade has been reduced to public messages that exalt any type of trash that could be sold. The meaning of design has been so deeply rooted in our culture, in our daily life that it cannot be perceived anymore. We live among a lot of things. Every day we produce thousands of objects that satisfy our wishes but at the same time generate new needs. Such a big amount of things that evolves itself, An accelerated creative process that is destined to implode on itself due to the effect of an already established aesthetic obsolescence that escapes to each rule of taste, including it in the concept of luxury what should be necessity.

Many products of our material culture have lost their own reason of being, this means that they are now considered as parasite rather than objects for use and service. Hence, a quite complex situation through which the designer, according to a new philological imperative, turns from the original position consecrated during the fifties to a different direction which is more oriented to an enlargement of the market for goods and to a continuous replacement of objects.



Indeed, this idea was already perceived by Branzi way back in the 1982 when he taught to his students his own reflections developed on the topic 'Merce and Metropoli' and subsequently presented in the text 'La casa calda' in which he likes describing a town through the numbers and types of objects contained in it. 'The Superarchitecture' – he said – 'is the architecture of the super-production, of the super-consume, of the super-reduction of the consume, of the supermarket, of superman and of the four-star petrol. The Super-architecture accepts the logic of the production and consume and develops a false action... We saw the urban space not as a set of architectural volumes but rather as an empty space full of furnishing.'

### MUTANT ARTEFACT AND NEW SCENARIOS FOR DESIGN

In such a scenario, we could hazard a guess and transfer to the common people the responsibility of such urban blight because 'it is the people who determine the production with their own choices.' In this way they support and spur designers to follow Hollywood behaviours typical of the media architects, of the 'archistars' as defined by Lo Ricco and Micheli. This is the reason of such a wide diversity and to say it all, of such vulgarity. But this is also the result of a democratization of the design, of a homogenization of the general taste despite the attempt of implementing it through geo-cultural micro-mutations which hide an exasperate the need for research of individuality.

A sort of design on demand, where everyone ideally is able to elaborate customized objects. The result is a Babel of mass-media, of concept-objects which describe a turbulent, invisible technological trajectory that embraces each thought-action, whether it is weak or changeable, local or universal. Symbolic objects sensitive to the transformation of the taste, for which it follows 'the logic of abstraction of fluxes, reducing the product to a brand which is put on the top of mountains of garbage and ineptitude piled up during the years'. A planetary garbage which Rem Koolhaas defines as 'Junk Space'.

There is also a new condition of sensorial and aesthetic involvement among the user, the object and the context which suggests the idea of a product which is no longer conceived as durable, static and unchangeable but rather as fluid, dynamic and adaptable to the changing conditions both of the physical context and the psychological space. So, the adjectives which better express the new dimension of the design are transition, changeable and immaterial, whose artefacts transform themselves into a nervous system characterised by sensitive entities with which to interact and feed what Branzi defines as the Architectural Link. Genetic metropolis which reflect the idea of reversible and crossed constructive systems which at the same are perpetually imperfect and incomplete but yet apt to contain spaces made of networks, service and relationships capable of activating and transferring information from the inside to the outside our way of living.

There is a new trend for the affirmation of a deeper view of things, a dream dimension that fuses the structure with the surface and transforms it into a sensorial filter able of networking and processing encrypted texts. The visual approach becomes the privilege means of contact with the object. 'A coincidence of vision among object, subject and system which introduces to a new definition of the metropolis considered as a big genetic deposit', in which the architecture and the design are nothing but 'weak systems connected to complex mass of human presence, relationships, interests, exchanges which fill in totally the space.'

To sum up, design aims at the creation and production of changing artefacts 'whose main destination is new pattern of aesthetic practise' through which the user/consumer interacts with thanks to a global networking system which is able to interpreter the individual latent need. What was impossible or far from the design codes, now it has achieved scenarios of Distance Manufacturing on Demand and e-manufacturing.

Generally speaking, since the human being has started to modify his/her environment, many of his/her creations – from the handicraft of the past to the present design, from the product of the material culture to the immaterial future artefact of the new soft-technology – he has always tried in the best way to please his/her own senses according to the changing fashion trends.

### **DESIGN, AESTHETIC AND CONSUMERS**

Today, we are conscious of sharing a strong crisis of the object whose old concept of aestheticism, which escape from any rule of taste and communication, is exchanged with 'necessary luxury'. The object is more and more having a representative function, so providing solutions which prefer the contemplation without its use more than a functional response. A sort of impoverishment of goods, as Carmagnola would say, in which the brand becomes a product discount.

Yet, the idea of an aesthetic of the environment – peculiar to the post-modern society – which stimulates the development of a sixth sense and privilege the symbolic aspects of the product-artefact rather than its related



contents is now the final frontier of a discipline apparently free of tightly functional connotations. It is a new discipline which replaces the simple and didactic relationship form-function with the binomial form-sense.

To this end, the essential condition for a successful marketing of a product is to perceive the consumer's trends in advance, to understand the actual changes of the society transforming the requests into needs for an ever more segmented demand. Today design is and it will be more in the future, a structural aspect of the developing process of entire sectors of goods production (both material and immaterial ones). 'It is corporate culture and shared capital.'

The task of the design is now to coordinate, integrate and arrange factors which may appear away from each another (technical-constructive, economic, functional, symbolic, cultural and systemic) yet complementary from a structural point of view. Thus stressing the importance of the single product rather than of system of products towards a new and more demanding request of widespread quality.

During the post-industrial age, the consumerism determined a reversal of the values from the user side by favouring the purely hedonistic, formal aspects of the object regardless of the intrinsic ones. The present culture, instead, propose a new figure, the 'prosumer', a consumer-producer who is able to suggest, corporate strategies and system of products oriented to a mass customization of the artefacts through feedback and feedforward actions. But today achieving the simplicity in the design is an imperative. Good design does not come from an order but rather from a sequence of questions. Recently, on the cover page of *Domus* magazine (July 2006) the writing 'Super Normal' appeared. It was the manifest with which Jasper Morrison and Naoto Fukasawa showed their idea of what design should have be: the project of objects which are measured with the daily life.

'I think it is quite easy to understand things and situations which can be defined as normal' Morison said. 'It happens when we saw a thing and we think: it is really normal. It deals with objects which have permeated our daily life, it is about things which have nothing to do with the concept of design. Or it happens when a new product absorbs the essence of something which everybody perceives and recognises as normal.'

This assertion suggests another idea: designers think that they are the only ones to create beautiful things but the world of normality, in many cases, achieves this better. The aim of the design is to create durable but most importantly visual, social, cultural and environmental things. We would say a complex question which recalls another important reflection.

If the market of goods rapidly becomes a sort of old fashion artefacts; if the archistars accept and share the ever growing arrogance of the power employed by Medium TV, proposing unlikely and unsustainable possible worlds; if common people prefer participating in this global world; who is to blame? To whom we could ascribe the causes of this? A possible answer lies in the education system which, because of the variety of specialisations, tends to keep away teachers and students from a global vision of the design, away from a general approach which should be considered as 'means of transformation of the entire society.'

### **DESIGN AND DIDACTIC**

Today, the students of the Design Schools are encouraged to produce ideas and communicate them as fast as possible according to the market's demand. They create 'nice' and beguiling objects, They dream of working models in which they can manage global and digital instruments. Their only concern is the visual and aesthetic aspect of the industrial object. They think they can manipulate a project by producing romantic, formal and stylistic ideas which most of the time do not reflect an intellectual honesty nor an ethical behaviour. They only have good ideas and that's it. So it is correct to assert that marketing departments and mass media are responsible for this distorted perception of design.

'The sales of products in a highly competitive worldwide market is appealing to the shape of things, shape which becomes the means of a pure logic of the profit, thus misleading the conventional definition of design as project and reducing it to a simple function of styling, an aesthetic cover of the product/logo.'

A mechanism applied to the world of goods, because the objects need to go out of style. This is the reason why the marketing sector is exclusively interested in 'using the design as a corporate added value, but design has nothing to do with it. The result is a form of a visual widescale pollution.' Moreover, the growing interest of the society in design does not correspond to a specific market demand. In this uncertain scenario of the demand, schools of design and designers wallow in the belief that creativity represents the only necessary diversity to be taught to students. This generates the misunderstanding for which designers themselves believe that they are the only ones who can create beautiful things (which are often cheap and impractical). But as claimed by Munari 'Creativity does not mean improvisation without method: in this way we create confusion and we mislead



students who feel they are free and independent artists. The sequence of a planning method is made of objective values, recognised by everybody as such, which become operational means in the hands of creative designers.' Munari's reflection forces us to think about a pre-established didactic model which, dividing the culture of the project into different scientific domains, produces as main result a distorted vision of the project in which students, designers and archistars become the very centre of an accidental universe devoid of any contact with the tangible world of the objects.

### **CONCLUSIONS**

The design presupposes a global approach, far from the fragmentation of the knowledge. Design must have an ethical attitude which tends to the change of things as potential energy for an innovative process of the whole society. A good designer is able to think in a circular way, comparing the internal and external components of the project. He acquires an operational method and experiences it first hand, he adopts, changes and implements it from time to time according to the different perspective of the development of the product. He starts from the unexpressed needs of the community and gradually he verifies hypothesis, materials, technologies. He never establishes a formal hypothesis. He first tries to define the different components as they are and then draws, sketches, outlines technological solutions, he develops model study and he verifies the feasibility in terms of technologic, economic and linguistic complexity.

Thus, it is quite clear that schools, academies and universities have the task of redefining the game rules of the entire discipline. Education and research are to start a trend through which design can recover the prototypical processes of the planning, from one hand, and thanks to an update methodology, which confirms the traditional operational models, they can realise and set up the dynamics of the contemporary project from the other hand.

However, a method is never absolute and definitive but it continuously changes because it is intimately related to the designer's personality who often transform its structure in order to upgrade, adapt or simply renew it. The rules of the method does not stop his personality but rather they stimulate the discovery of new ideas which can be useful to him and to the others as well. The development of new ideas and products requires, today more than ever, a rigorous planning method and an ethical behaviour which go behind the simple commercial slogans. In fact, these pass off products as design, but in reality they pollute our environment. This new method encourages designers, who are often freelance teachers, to revise the creative act as the principal moment of the project, and they transfer it to the new generations. It is an act of responsibility which restrains the idea of easy earnings to the detriment of a serious reflection on the consequences that a distorted project produces not only on the environment but also on the human and social behaviours. Today, to teach and to be a designer means to share the cultural, economical and political point of views among those who develop innovative paths as well as sustainable developments and those who are far from the normality. Munari would say a 'tailor's work' which imposes the rediscovery of new values and a new collective consciousness which should realise possible spaces of dialogues and discussions in a system of parallel and melting worlds.

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# THE EFFECTS OF BAUHAUS PHOTOGRAPHY ON THE THIRD REICH

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### **ABSTRACT**

The Bauhaus was established in Weimar Republic after World War I; and it emphasizes reconstruction of ruined values and hopes after the war. The school, having the slogan 'combining art and technology by starting from a scratch', stresses the research and creation process in radical experimental studies on photography, and has played an important role in the evolution of photography.

The Bauhaus aimed at reconstructing visual environment; and camera was an ideal medium for Bauhaus because of its characteristic of producing technological image by combining art and technology. The school structured its experimental studies on the researches of new educated photographers; it erased the past of the perception, which was far from research and innovations, of photography, which was based, up to that time, on established 'modern', individual inspiration, and it initiated the efforts of reconstruction. Photography was reunited with new styles of observation, affluence of expression, and new techniques, which are still in use today, by the help of experimental studies at the Bauhaus being conducted within this framework.

Adolph Hitler's appointment as German Chancellor in 1933 signalled the end of the Weimar Constitution and the Bauhaus. The aim of the National Socialists was to be able to ensure the prosperity of the German nation by eliminating all the factors that could confuse the superior German nation's mind.

This paper argues whether the techniques developed as results of the experimental photography researches conducted at the Bauhaus, were effective on the advertising photographs published during the Third Reich.

It is claimed that the techniques developed at the Bauhaus, founded in Weimar Republic, as results of the experimental photography researches were applied in the advertisements, which were parts of life reshaped as a result of the efforts for nazification of art, culture and advertising sector by National Socialists during the Third Reich, despite the fact that Bauhaus was closed in 1933 by being described as a bolschevic institution.

Keywords: Bauhaus, Photography, Advertisement, Third Reich, Weimar, German

### 1.Bauhaus in 'Golden' Twenties

In the twenties, Germany experienced a great upsurge in intellectual and artistic life. The roots of this cultural revival and the modern ideas and creations which furthered it mostly originated around the turn of the century. But it was now that these developments achieved their widest impact, especially since in many respects the new democratic constitution offered them much greater scope.<sup>1</sup>

The Bauhaus School was established in Weimar Republic in 1919 after World War I; and it emphasizes reconstruction of ruined values and hopes after the war. The founders of school sought to use and improve new facilities provided by technology and science, such as photography, in creating a new and modern world as contrary to the traditional mentality dominating to that time. They endeavored to develop styles of perception by training new individuals in order to design this utopian environment.

Experimental studies on photography have a great importance among the researches for the purpose of improving photography. The Bauhaus School aimed at reconstructing visual environment by 'combining art and technology'; and camera has been an ideal medium for Bauhaus because of its characteristic of producing technological image by combining art and technology. Bauhaus structured its experimental studies on the researches of new educated photographers; it erased the past of the perception, which was far from research and innovations, of photography, which was based, up to that time, on established 'modern', individual inspiration, and it initiated the efforts of reconstruction. Photography was reunited with new styles of observation, affluence of expression, and new techniques, which are still in use today, by the help of experimental studies in the Bauhaus being conducted within this framework.

After the invention of photography in nineteenth century, all the arguments, expressions thereof were built on image. This may be considered to be a very natural situation, because initial thoughts of people about photography were that it was an image obtained mechanically. Because of such thoughts and since first

<sup>&</sup>lt;sup>1</sup> German Bundestag Public Relations. (1998). "The Weimar Republic and The Third Reich" in *The Questions on German History Paths to Parliamentary Democracy*, Bonn.



photographers had a background of painting, it was not considered in the beginning that photography can have a peculiar language. The painters attempted to replicate nature using camera and consequently photography became a servant of the art of painting.

Photography, sought to be built on a painting tradition of thousands of years, naturally brought also the thoughts and reactions. First serious reactions against the arguments of painting and photography and against the rise of photography were from a group of French artists. Paul Delaroche, Parisian artist depicting historical subjects, concluded: 'The art of painting is dead'. His English colleague William Turner also had a sharp reaction against the beginning of optic age and stated: 'This is the end of art'. Afterwards Charles Baudelaire made a step forward and in his essay titled 'Is Photography an Art?', he defined photography as 'the image of a narcissist man on a piece of metal'; and thus he considered photography not as an art but industry and also noted that it could never replace any branch of art, especially painting; that it is only a passing whim; and that photography could only be a servant of science and art.' The opinions of poet were rather conservative; nevertheless, they are reasonably interesting that they reflect the thoughts and concerns of the intellectual at those times.

On contrary, Laszlo Moholy-Nagy, one of the Bauhaus theorists emphasizing the creativity side of photography, said in 1925 "photography is modern art" and added "The discussion between photographers and artists in terms of "is photography an art?" is a wrong way of putting the problem on the foreground. We do not intend to replace painting with photography anyhow. What is the use of creating new forms of optic creation as brought by technological development? Critics always start out with the values of painting; they should now consider the own value of photography. It can only be judged in this way. Photography is not simply the reflection of the visible". Thus, the Bauhaus became in Germany the focusing point of the new creative forces accepting the challenge of technical process. It became the experimental shop, the laboratory of the new movement. By uniting, an artistic, scientific, and a real workshop training-with tools and basic machines, by keeping in constant touch with advancing art and technique, with the inventions of new materials and new constructions. <sup>3</sup>

### 2. Technical Innovations at Bauhaus

The studies on photography at the Bauhaus are based on the researches of young students trained and on improving the findings obtained at the end of these studies. The language and expression styles of photography began to be developed by means of the analyses and syntheses on these findings. At the end of these researches, the variety and improvement in ways of expressing photography resulted in the emergence of techniques still used effectively today. Use of multi-shots, photomontage, typography and photograph together is still available today.

Photomontage, which is developed at the Bauhaus, has a significant place in the studies on photography. 'Moholy's occupation with the medium of photography consists of the photomontages he himself called photo sculptures' <sup>4</sup> Photo sculpture is a composite picture which is made from a number of photographs. 'The photo sculpture brings about to use photography to communicate discoveries and trains of thought that could not be achieved to the same extent by other means. Visual and mental aspects are accessible in a moment, if the effect is to be achieved. For that reason, a balanced composition of the mental and the optical is an especially important component here. The visual

structure of these photo sculptures is not, however, composition in these old sense, not a solution of form and harmony for its own sake, but composition formed in pursuit of the goal that has been seen: the formation of ideas.' <sup>5</sup>

The elements in *Militarism* (Figure 1), which are models of a famous photo sculpture created by Moholy-Nagy, have been developed by combining the cross sections of different photographs. 'Formerly regarded as distortion, today a startling experience! An invitation to re-evaluate our way of seeing. This picture can be turned round. It always produces new vistas'.<sup>6</sup> This means 'recognizing the four corners of the image as

<sup>&</sup>lt;sup>2</sup> Greenhill, R.& M. Murray & J.Spence. (1992). *Photography Art*. (İstanbul:Remzi Kitabevi).(İn Turkish)

<sup>&</sup>lt;sup>3</sup> Moholy-Nagy, L. (2005). The New Vision: Fundamentals of Bauhaus Design, Painting, Sculpture, and Architecture (1938) tr. by Daphne M. Hoffmann. NY, Mineola: Dover Books.

<sup>&</sup>lt;sup>4</sup> Wick, R. (2000). Laszlo Moholy-Nagy (1895-1946) and Laszlo Moholy-Nagy's Institute in Chicago in *Teaching at the Bauhaus* New York: Hatje Cantz Publishers.

<sup>&</sup>lt;sup>5</sup>Moholy-Nagy, L. (1980). *Photographs and Photograms* tr. by F. Samson. New York: Pantheon Books.

<sup>&</sup>lt;sup>6</sup> Moholy - Nagy, L. (1969). *Painting, Photography and Film* tr. by. J. Seligman.



the only system of orientation. Top is no longer below here; gravity is suspended; one looks for a handhold on the edges'. In the experimental forms of photomontages, dissecting and rearranging photographic elements and combining them with drawings attract attention. The images which were represented with lines and shapes produce a dynamic spatial.

In addition to photomontage technique, there have been studies at the Bauhaus on the use of typography and photograph together. The use of photograph in typography was explored by Herbert Bayer, Moholy-Nagy and Joost Schmidt. One of the most successful and famous examples of Bauhaus typography is the title page of Bauhaus.

Herbert Bayer worked as a typographer, advertising artist, photographer, painter, sculptor, architect and even as a designer of office landscapes. The ideals of the Bauhaus, where Bayer acquired his artistic education, are fittingly reflected in the creative activities that he pursued during various periods of his life. From 1921 to 1925, he studied at the Bauhaus in Weimar under Johannes Itten. In 1925, he took over the printing and advertising shop of Bauhaus in Dessau, where he was also responsible for the design of Bauhaus printed publications. <sup>8</sup>



Figure 1. Photo Sculpture *Militarism* by L. Moholy- Nagy, 1924<sup>9</sup>

In this typo-photo (Figure 2), Herbert Bayer avoids using words to show something of the context. The plastic basic forms, symbolic elements that played a great part in the Bauhaus doctrine, were linked with drawing implements and the periodical itself. Photomontage was used; pieces were stuck together and photographed the whole thing. All these findings came to focus in the practical tasks of contemporary advertising art. 'To put an advertising message through effectively, the most heterogeneous elements -verbal message, drawing,

London: Lund Humphries.

<sup>&</sup>lt;sup>7</sup> Kemp, W. (1978). *Foto-Essays zur Geschichte und Theorie der Fotografie* tr. by R. K. Wick. Munich: Schirmer/Mossel.

<sup>&</sup>lt;sup>8</sup> Goodrow, G.&M.B. Thieleman (2001). 20th Century Photography Museum Ludwig Cologne ed. by Simone Philippe. Köln: Taschen.

<sup>&</sup>lt;sup>9</sup> Moholy-Nagy, L. (2007). Photo sculpture Militarism by L. Moholy- Nagy1924 <a href="http://www.tate.org.uk/modern/exhibitions/albersmoholy/rooms/room3.shtm">http://www.tate.org.uk/modern/exhibitions/albersmoholy/rooms/room3.shtm</a>



photography, and abstract shapes- were employed. This variety of meaning signs and symbols could only be integrated by a dynamic meaning organization' 10

Even though there was a typography workshop at the Bauhaus, later called the 'Printing and Advertising Workshop', only during the Dessau period beginning in 1925... The masters most involved in this were Johannes Itten, Oscar Schlemmer and Laszlo Moholy-Nagy, and from the student body Joost Schmidt, Josef Albers and Herbert Bayer... An 'advertising department had been set up in the mural painting workshop under the direction of Wassily Kandinsky as master of form'. <sup>11</sup>



Figure 2. Bauhaus Periodical no: 1 by Herbert Bayer, 1928<sup>12</sup>

From about 1923 on, advertising in Germany enjoyed an unprecedented boom based on the argument that it 'improved quality and awakened egalitarian needs' and also functioned 'in the service of democratization'. <sup>13</sup> To date just a few of the most important events: in 1923 the magazine *Gebrauchsgrafik* (Applied graphics) was established; in 1925 the Union of German Window Dressers was founded and began to publish the

<sup>&</sup>lt;sup>10</sup>Kepes, G. (1995). *Language of Vision* ed. by S. Gideion and S. I. Hayakawa New York: Dover Publications.

<sup>&</sup>lt;sup>11</sup>Siebenbrodt, M.(2000). *Typography and Advertising* in Weimar Bauhaus. Ostfildern Ruit: Hatje Cantz .

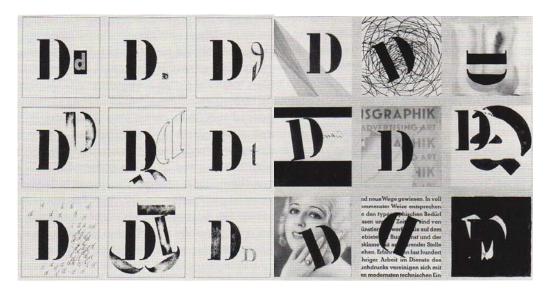
<sup>&</sup>lt;sup>12</sup>Bayer, Herbert. (2016). Bauhaus Periodical no: 1 by Herbert Bayer 1928. http://www.mhf.krakow.pl/wystawy/bauhaus/bauhaus/bauhaus2.htm.

<sup>&</sup>lt;sup>13</sup>Hermand, J. & F. Trommler. (1978). *Die Kultur der Weimarer Republik* Munich: Nymphenburger Verlagshandlung.



magazine Schaufenster: Kunst und Technik (Display windows: Art and technology); in 1926 Roy S. Durstine's book Making Advertisements and Making Them Pay (New York: C. Scribner's Sons, 1920) appeared in German translation; and in 1929 the International Poster Exhibition took place in Munich.

Figure 3. Contrast Study: variants of letters on a given black stencil D by Kurt Kranz, 1931<sup>14</sup>



From atomic happenings to cosmic actions, all elements in nature are in perpetual interaction. For this reason, forms are appearing and disappearing; and man who is experiencing all these, is the subject in all kinetic change. As J.J. Gibson, the psychologist famous with his studies on the field of visual perception, states in his book titled 'Ecology of Visual Perception', observing individuals are always in motion. The human being in motion, while observing his/her environment, may be stable but at least his/her eyes move.

Since everything was in motion and within a process of continuous change, in fact the portraits (photographs) about life were segments in seconds that were taken from a process already experienced and known by all. However, the studies of catching movement are the act of presenting to viewers the segments of flowing time, which the human beings are a part thereof and which is available at such speeds that can not be noticed. In the Bauhaus, where new observation styles were sought in direction with these developments, the motion was examined and thereby the details of moments that we live but do not notice were presented to the viewers.

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<sup>&</sup>lt;sup>14</sup>Wick, R. (2000). Laszlo Moholy-Nagy (1895-1946) and Laszlo Moholy-Nagy's Institute in Chicago in *Teaching at the Bauhaus* New York: Hatje Cantz Publishers.





Figure 4. Lee King, School of Design in Chicago<sup>15</sup>

Renaissance painters used linear perspective as the main device for representing spatial relationships. Their artistic goal was the optical scientific mastery of nature. They sought to achieve this by focusing on one aspect. Linear perspective gave a unified formulation of space but it restricted the spatial relationship to one angle of vision, one fixed point of view, that of the spectator, by creating an illusory depth between objects and illusory distortion of their actual shape. By photography in Bauhaus, untouched territories of perspective were explored, because the camera was able to reproduce objects from an angle of vision. Not only the frontal and profile views but also the view from above, the bird's eye view, and that from below, the frog's eye view were researched. In addition, for the further exploration of the appearances of things, optical accessories were employed. Mirrors, prisms and special lenses distorted. Repeated and molded the things and created images not corresponding to direct visual perception.

<sup>&</sup>lt;sup>15</sup> Kepes, G. (1995). Language of Vision ed. by S. Gideion and S. I. Hayakawa New York: Dover Publications.

<sup>&</sup>lt;sup>16</sup> Kepes, G. (1995). Language of Vision ed. by S. Gideion and S. I. Hayakawa New York: Dover Publications.



Figure 5. Bauhaus in Dessau Spring by L. Moholy-Nagy, 1926<sup>17</sup> Figure 6. Spring by L.Moholy-Nagy, 1929<sup>18</sup>

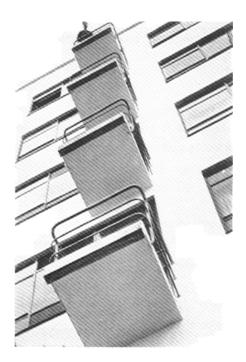




Figure 7. Bird's Eye View by L. Moholy-Nagy $^{19}$ 



<sup>&</sup>lt;sup>17</sup> Ibid.

<sup>18</sup> Ibid.

<sup>&</sup>lt;sup>19</sup> Kepes, G. (1995). Language of Vision ed. by S. Gideion and S. I. Hayakawa New York: Dover Publications.



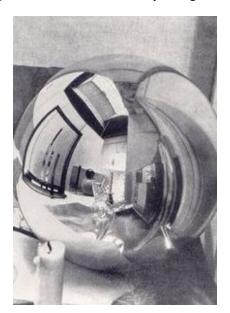


Figure 8. Distortion in Mirror by Georg Muche<sup>20</sup>

### 3. The Third Reich

For in politics and social history, 1930 signifies world economic crisis, constantly rising unemployment and the growth of National Socialism.<sup>21</sup> The Depression years had both in material and in psychological terms been appallingly damaging. Hopes and ideals had been blighted almost before they could take shape.<sup>22</sup> To efforts to transform the Republic into a more authoritarian state seriously weakened the forces and institutions of democracy. And so, on 30 January 1933, political power finally fell into the hands of the National Socialists.<sup>23</sup>

It was undoubtedly used most brilliantly by Heartfield, first against the Weimar Republic and then to chart the terrible rise of Fascism and the dictatorship of Hitler. In *Metamorphosis* (Figure 9): *Ebert, Hindenburg, Hitler*, Heartfield claims that the Weimar Republic was the caterpillar from which the Death's Head Moth/Hitler hatched.<sup>24</sup>

In the Third Reich 'on the surface, life was in many ways more peaceful than it had been during the final turbulent years of the Weimar Republic. The immense political tensions of those years appeared overcome, and the economic and social problems in many cases had threatened people's very livelihoods were gradually being solved ... This was what most Germans wanted and they were willing to make the sacrifices which the Leader demanded of them to get it: the loss of personal freedom, a Spartan diet ("Guns before Butter") and hard work'.<sup>25</sup>

As Lukacs said, a good photomontage has the effect of a good joke. Many of Heartfield's best jokes which in being funny lose none of their savagery - involve a literal translation of Nazi rhetoric. So, in *Hurrah, the Butter is Finished!* (19 December 1935), the text at the bottom, a quotation from a speech by Goering: (in his Hamburg speech): "Iron always makes a country strong, butter and lard only make people fat." So Heartfield

www.tojcam.net

<sup>&</sup>lt;sup>20</sup>Muche, G. (2016). Distortion in Mirror by Georg Muche. http://cms.ifa.de/ausstellungen/ausstellungen-im-ausland/foto/ bauhausfotografie/diekuenstler-a-z/georg-muche/.

<sup>&</sup>lt;sup>21</sup> Sembach, K. (1972). *Into the Thirties: style and design* 1927-1934, tr. by J. Filson London: Thames and Hudson.

<sup>&</sup>lt;sup>22</sup> Peukert, D. J.K. (1987). *Die Weimarer Republik; Krisenjahre der Klassichen Moderne* Frankfurt.

<sup>&</sup>lt;sup>23</sup> German Bundestag Public Relations. (1998). The Weimar Republic and The ThirdReich in *The Questions on German History Paths to Parliamentary Democracy*, Bonn.

<sup>&</sup>lt;sup>24</sup>Ades, D. (1976). John Heartfield; Propaganda, Publicity and Constructivism in *Photomontage*. London: Thames&Hudson.

<sup>&</sup>lt;sup>25</sup> German Bundestag Public Relations. (1998). The Weimar Republic and The Third Reich in *The Questions on German History Paths to Parliamentary Democracy*, Bonn.



shows (Figure 10) a family chewing obligingly on iron, while in the background photographs of Hitler are employed as decorative wallpaper.<sup>26</sup>



Figure 9. Metamorphosis by John Heartfield as the original in AIZMagazine 16 August1934<sup>27</sup>

In 1933 the Bauhaus was disbanded as the Third Reich persecuted those who followed modern artistic schools of thought as "Cultural Bolshevists", whether they embraced 'New Objectivity' or abstract art.<sup>28</sup> The old Bauhaus in Germany was eliminated by the Nazis, its teachers and students scattered over the world holding many important positions in education and production. Its spirit became the guide of progressive art education throughout the world.<sup>29</sup>

METAMORPHO

Figure 10. "Hurrah, the Butter is finished!" John Heartfield, 19 December 1935<sup>30</sup>

<sup>&</sup>lt;sup>26</sup>Ades, D. (1976). John Heartfield; Propaganda, Publicity and Constructivism in *Photomontage*. London: Thames&Hudson.

<sup>&</sup>lt;sup>27</sup> Ibid.

<sup>&</sup>lt;sup>28</sup> Johann, E. (1983). *The Weimar Republic 1918-1933 and The death of freedom* inGerman cultural history from 1860 to the present day. Munich: Nymphenburger Verlagsbuchhandlung.

<sup>&</sup>lt;sup>29</sup> Moholy-Nagy, L. (2005). The New Vision: Fundamentals of Bauhaus Design, Painting, Sculpture, and Architecture (1938) tr. by Daphne M. Hoffmann. NY, Mineola: Dover Books.

<sup>30</sup> Ibid.





# 4. Evaluation of Advertisements of Era from the Point of Bauhaus Photography Techniques

A map of *Großdeutchland* (Figure 11) with tiny men representing the location of various units of the huge *Preussag* industrial and conglomerate.<sup>31</sup> The men figures on the *Grosßdeutschland* map were put on the map by photomontage technique.

Uniform manufacturer *Oscar Tovote* of Herfold in Westfalen. The company manufactured German military and paramilitary uniforms of every kind. They specifically mention uniforms for the police, miner's organizations, the post office, the railway, fire departments, aviators, the Labor Service, the *Sturmabteilung* and *Schutzstaffeln*, the army and factories. This ad (Figure 12) appeared in the Leipzig *Illustrierte Zeitung* in November 1936.<sup>32</sup> In this advertisement, seven different images were brought together by means of photomontage technique which was researched by the Bauhaus photographers.

This *Auto-Union* ad (Figure 13) from 1936 features examples of vehicles from each of their four vehicle brands: *Horch, Audi, DKW* and *Wanderer*. It also celebrates *Auto-Union's* contributions to fulfilling Hitler's promise to motorize the car-poor country of Germany, and to build a super-highway system without equal in the world.<sup>33</sup> The modals used in the ad representing German brands are those taken in different times and and different places. The parts taken from different photographs being combined by photomontage technique.

This advertisement (Figure 14) "for *Singer* Sewing Machines in Berlin, offering speacial machines for the armed forces clothing industry. The ad ran in Leipzig Illustrierte Zeitung of November 1936 and says that the company manufactured machines to sew 'shoes and boots, uniforms, underwear' and that the machines were 'always dependable'".<sup>34</sup>In the Singer advertisement, the use of photography in typography is observed.

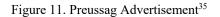
33 Ibid.

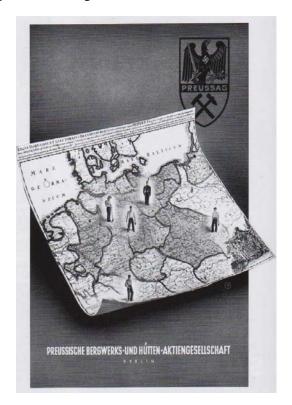
<sup>&</sup>lt;sup>31</sup> Cowdery, J. & R. Cowdery, (2004). *German Print Advertising 1933-1945*. USA: Victory Publishing.

<sup>&</sup>lt;sup>32</sup> Ibid.

<sup>34</sup> Ibid.

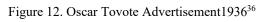






<sup>35</sup> Ibid.







<sup>&</sup>lt;sup>36</sup> Ibid.



Figure 13. Auto Union Advertisement 1936<sup>37</sup>



Figure 14. Singer Advertisement 1936<sup>38</sup>



<sup>&</sup>lt;sup>37</sup> Ibid.

<sup>38</sup> Ibid.



Figure 15. Mix&GenestAdvertisement 1936<sup>39</sup>



Mix &Genest showed the inside of one of their 'long distance' desk telephones in this advertisement. The ad copy says the telephone could 'connect you with the world, is pleasant to look at, comfortable for the ear, perfect in performance and dependable in use'. 40 In Mix& Genest's telephone advertisement (Figure 15), the photograph of the product and the typographic organization containing the qualities of the telephone are presented together.

Figure 16. Lürssen Yacht Advertisement<sup>41</sup>



The  $L\ddot{u}rssen$  yacht and boat wharf in Bremen was very proud of its contribution to the Kriegsmarine. This advertisement (Figure 16) shows a  $L\ddot{u}rssen$  Schellboot. (Fast Boat or Patrol- Torpedo Boat) running at full throttle on the open sea. The bottom line of the ad copy says that  $L\ddot{u}rssen$  built the boats for the first Fast Boat Flotilla of the German Navy. <sup>42</sup> In the L\"urssen advertisement, the representation of the movement which was developed in Bauhaus, was used.

The Focke-Wulf Fw 200 C was an improvised but very effective maritime reconnaissance bomber that had been adapted from a purely commercial transport aircraft.<sup>43</sup> In this product advertisement (Figure 17), frog's eye view and representation of movement developed at Bauhaus, which had the aim of forming new visions, were used together.

<sup>&</sup>lt;sup>39</sup> Ibid.

<sup>&</sup>lt;sup>40</sup> Ibid.

<sup>&</sup>lt;sup>41</sup> Ibid.

<sup>&</sup>lt;sup>42</sup> Ibid.

<sup>&</sup>lt;sup>43</sup> Ibid.





Figure 17. Focke Wulf Advertisement<sup>44</sup>

Figure 18. Deutsche Shipyards Advertisement,1939<sup>45</sup>



This advertisement was "from a series of ads for Deutsche shipyards in Kiel. It shows one of their poducts, the heavy cruiser *Blücher*. The ad ran in the Leipzig *Illustrierte Zeitung* in November 1939". <sup>46</sup> In this product advertisement (Figure 18), the representation of movement application developed at Bauhaus, is observed.

<sup>44</sup> Ibid.

<sup>45</sup> Ibid.

<sup>&</sup>lt;sup>46</sup> Ibid.





Figure 19. Tempo Advertisement, 1936<sup>47</sup>

The jeep - like *Tempo* had a low profile but still provided 14 inches of ground clearance. It could ford water 24 inches deep and got 26 miles per per gallon of gasoline. This advertisement (Figure19) appeared in the Leipzig *Illustrierte Zeitung* in November 1936.<sup>48</sup> In the Tempo advertisement three different photographs of the jeep were used. In the photograph used at the upper left frog's eye view, the searches of which were conducted in Bauhaus, which developed new visions was used. The audience is made to see Tempo's position in a hilly land. By the means of frog's eye view, the strength of the vehicle is stressed. In the upper- right photograph, the vehicle is seen while going in the mountain road. The representation of movements , the visualition of the moment was one of the studies that Bauhaus conducted in photography.



Figure 20. BMW Advertisement, 1936<sup>49</sup>

<sup>&</sup>lt;sup>47</sup> Ibid.

<sup>&</sup>lt;sup>48</sup> Ibid.

<sup>&</sup>lt;sup>49</sup> Ibid.



There are two two pictures in the advertisement (Figure 20) "It says that the impressive line-up of motorcycle troops on *BMW*s was assembled for Hitler's birthday parade. The three men on the photo were the best riders of the army and won the "Führer's Prize" for their performance in the 1936 Six Day Race. 50 In the BMW advertisement, bird's eye view which was developed at the Bauhaus, was used.

### 4.Conclusion

Photography, which was developed through experimental researches, found new techniques, and new points of views that were developed (photomontage, use of photograph in typography, bird's eye view, frog's eye view) produce new visions for the audience. The efforts of research and development which continued throughout the 1920s which were described as 'golden' years, photography stopped being a technological record of the nature and had its unique language. Also in the advertising workshop, advertising researches were made, using new techniques of photograph.

After the 1920s, which were described as 'golden' years, with the start of the 1929 economic depression, a chaos in the political and economic fields started to be lived in Weimar Republic. The economic depression caused the republic to collapse and the democratic environment to disappear. The economic depression and rising unemployment resulted with the fast incline of the National Socialism. After the National Socialist Party came to power in the leadership of Adolph Hitler in 1933, in all the fields of life a fast nazification process started. The nazification of economy, art, culture and press caused the Bauhaus School to close in 1933 due to the fact that it contradicted with the modern, free structure of the school. The Bauhaus School was described as a cultural bolshevic institution by the National Socialists and its masters forced to immigrate to various countries of the world.

The main reasons why the National Socialists took over the government were that the German Nation accepted the party as the only alternative for their relief and also the effective advertising they conducted. In an article on graphic design, Jeremy Ansyley conveyed the rising of Nationalism in that way. 'Despite attempting to ridicule all that had been advocated in the Weimar years - it closed the Bauhaus in 1933 - it used some of the most advanced techniques of film and photomontage to promote its extremist policies' The National Socialists who came to power as a result of their successful advertising were welcomed by the advertising sector. However, the nazification efforts continued also in the advertising sector and the free advertising sector went into the domination of the national socialism just like other institutions.

In the 1930s, with the improvement of economy, the increase in the pace of industrialization and the solution of the unemployment problem, the German origin industrial product advertisements were encouraged with the aims of revitalising the economy. In the industrial product advertising photographs which were examined referring to the catalogue named *German Print Advertising 1933-1945*, which Ray and Josephine Cowdery published in 2004, the use of photomontage, use of photograph and typography, use of bird's eye view and frog's eye view which were discovered by Bauhaus photographers, were observed.

Although the techniques developed by Bauhaus masters were used, the National Socialist propaganda took part besides the product advertising in the industrial product photographs. In the photographs, the use of German Eagle and swatiscas in a large number directly or indirectly is observed. In this sense, the advertising photographs of 'German' industrial products do not present a free structure in terms of content.

The freedom that the republican regime and democracy ensured in Weimar years, was destroyed by the dictator regime in the leadership of Adolf Hitler during the Third Reich. Due to the pressure encountered in the advertising sector, the contents were manipulated but the techniques that were developed in Bauhaus continued to be used.

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<sup>&</sup>lt;sup>50</sup> Ibid.

<sup>&</sup>lt;sup>51</sup> Aynsley, J. (2000). 'Graphic Design: Shock of the Old' Independent, London..



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# UNIVERSITY STUDENTS OF ANXIETY REGARDING FUTURE TECHNOLOGIES

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### **ABSTRACT**

The aim of this study was to identify the concerns of the university's students and future technologies it is to detect changes in anxiety after the training given to these students. Research in the 2016/2017 academic year, Computer and Instructional Technology at Sakarya University Education, Sociology and Turkish language studying in the Literature section was carried out with 100 students. A questionnaire developed by the researchers to collect data in this study. In a survey carried out by scanning the model it is applied to pretest students. SPSS 16 software was used to analyze the data obtained by post test administered after the training on the subject. The analysis of the data, frequency, one-way analysis of variance (ANOVA) was applied and the level of significance. 05 As has been adopted. According to the department where they have students in the survey results showed that the differences in pretest-posttest.

**KeyWords:**Future, technology, technologyconcerns

### INTRODUCTION

Societies have changed for centuries depending on their characteristics and needs. In this process of change, science and technology also take place (İşman, 2001). Ayhan (2002) notes that in the twentieth century, especially in the last quarter of the century, there have been significant changes and transformations in the world, On the basis of these changes and transformations, universal socio-economic development and rapid and comprehensive changes in the field of science and technology. Aksoy (2003) states that technology exists with human history, Akgün, Yilmaz and Seferoğlu (2011) indicate that in the changing world, there is almost no space unconnected with technology.

Alkan (1998) defines technology as a discipline that is formed by combining various elements such as machines, processes, methods, processes, systems, management and control mechanisms at a certain level and serving as a bridge between science and practice, Braun (1998) suggests that technology, as a systematic application of scientific or other regular knowledge to practical tasks, According to Bruton and White (2007); As a practical application of learning and information by individuals and organizations to assist the human effort; Abetti (1989) is also a technologist; Techniques and tools that can be used to design, develop, manufacture and implement products, systems and services, resulting from science and experience.

While Goetsch (1984) expresses that computers, robots and satellites are seen as tools for solution of problems, today's commonly used hightechnology concept is used for data processing, production, information management and transfer, education, national defense, Entertainment, energy management, environmental pollution control, security, communication, and so on. Aksoy (2003) states that today, more emphasis is placed on the effect of technology on economic, cultural and social areas, while at the same time the issue of what might be anticipated should also be noted.

### The Purpose of Research

Within the scope of the study, it was aimed to reveal the concerns of your future Technologies of the students who are studying in the Departments of Computer Education and Instructional Technology, Sociology and Turkish Language Literature at Sakarya University.

### METHOD

In this section, information about the research model, the universe and sample, the data collection tool, and the data collection and analysis will be given.

### Research Model

Survey screening model was applied. The main purpose of screening research is to describe the situation as it exists. Everything that is subject to research is tried to be defined as if it is within its own conditions (Karasar, 2005). The data obtained from pre-posttest students from the students constitute the screening part.



### **Universe and Sampling**

Students of Sakarya University constitute the universe of the research in 2016/2017 education period. The sample is composed of 100 students studying in the Department of Computer Education and Instructional Technologies, Sociology and Turkish Language Literature at Sakarya University in Sakarya University in the academic year of 2016-2017 in 2016-2017 academic year.

### **Data Collection Tool**

In order to collect data in the research, a scale prepared by the researchers was used to determine the concerns of university students about the future technologies. The scale consists of two parts. The first part consists of the items aiming to obtain the demographic information of the students while the second part consists of 22 items in the 5 likert type in order to determine the future concerns of the students.

### **Data Collection and Analysis**

The data obtained by means of quantitative data collection in the study were analyzed using SPSS 16.0 (The Statistical PackageforTheSocialSciences) statistical program and the significance level was accepted as .05 in all the analyzes made in the research. Descriptive statistics, t-test, one way analysis of variance (Anova) were applied in the analysis of quantitative data.

### Research Process

In the research process, the pre-test students who were prepared by the researchers to determine their concerns about the technology of the future were applied and the students were trained by the presentation titled "Future is Future to Us". The main topics covered in the given training are as follows:

Future computers, Future internet, 3D-4D Printers and Scanners, Virtual Reality, Artificial Intelligence, Bionic Human and Avatars, Robots, Holograms and their use in Education, Flying Cars, Magnetic Car be trains, Smart Eyes, Same Tv Different Channel Monitoring, Brain Reading Cloning, Cyber War, and Cybercrime, Ordering Children, Fatherless Children, Cloning, Solar Ranges, Nano Ships, Solar Energy, Space Tourism, Saving of Dreams, Consciousness Transmission, Consciousness Transmission, Future and Transmission Link, Orontal, Telapatic Communication and Media Listening, Nano, Technology Pico Technology Transition, Internet of Smart Houses and Objects, Future Education, Smart Classes, Hologram Teachers, etc. After the training, a post test was conducted to determine the concerns about future technologies and the students' Change has been tried to be determined.

### **FINDINGS**

**Table 1:** Demographic information of students participating in the survey

|            |  | F  | %  |
|------------|--|----|----|
| Gender     | female   | 56 | 56 |
|            | male   | 44 | 44 |
| Class      | 1  | 0  | 0  |
|            | 2  | 29 | 29 |
|            | 3  | 3  | 3  |
|            | 4  | 68 | 68 |
| Department | Departments of Computer Education and Instructional Technology | 38 | 38 |
|            | Turkish Language Literature                                    | 32 | 32 |
|            | Sociology  | 30 | 30 |



**Table 2:** Students' future technologies and inventions interests me "relationship between the departments they read with their responses to questions.

|           | Variance<br>Source | Sum of squares | sd | Squares<br>Average | F     | p    |
|-----------|--------------------|----------------|----|--------------------|-------|------|
| Pre-test  | Between groups     | ,479           | 2  | ,240               | ,362  | ,697 |
|           | Inside groups      | 64,111         | 97 | ,661               | -     |      |
|           | Total              | 64,590         | 99 |                    | -     |      |
| Post test | Variance<br>Source | Sum of squares | sd | Squares<br>Average | F     | p    |
|           | Between groups     | 5,814          | 3  | 1,938              | 2,290 | ,083 |
|           | Inside groups      | 81,226         | 96 | ,846               | -     |      |
|           | Total              | 87,040         | 99 |                    | -     |      |

According to the results of the analysis, there is no significant difference between the answers given by the students in the question "Future technologies and discoveries are interesting" and the pre-test and post-test made between the readings (p>.05).

**Table 3:** The relationship between students' responses to the question "I follow the printed or online magazines about the future" and the departments they read.

|           | Variance<br>Source | Sum of squares | sd | Squares<br>Average | F     | p    |
|-----------|--------------------|----------------|----|--------------------|-------|------|
| Pre-test  | Between groups     | 10,208         | 2  | 5,104              | 3,809 | ,026 |
|           | Inside groups      | 129,928        | 97 | 1,340              | -     |      |
|           | Total              | 140,90         | 99 | •                  | -     |      |
| Post test | Variance<br>Source | Sum of squares | sd | Squares<br>Average | F     | p    |
|           | Between groups     | 23,965         | 3  | 7,988              | 6,630 | ,000 |
|           | Inside groups      | 115,675        | 96 | 1,205              | -     |      |
|           | Total              | 139,640        | 99 |                    | =     |      |

According to the results of the analysis, it is seen that there is a meaningful difference between the answers given by the students in the question "I follow the printed or online magazines about the future" and the pre-test and post-test made between the sections they read (p < .05). It is seen that the students who read in the Turkish language differ from the students who study in other departments to follow the printed or online magazines about the future.



**Table 4:** Students "I think it is a good development for Quantum computer technology of computers" relationship between the departments they read with their responses to questions.

|           | Variance<br>Source | Sum of squares | sd | Squares<br>Average | F            | p    |
|-----------|--------------------|----------------|----|--------------------|--------------|------|
| Pre-test  | Between groups     | 11,089         | 2  | 5,545              | 5,044        | ,008 |
|           | Inside groups      | 106,621        | 97 | 1,099              | _            |      |
|           | Total              | 117,710        | 99 |                    | <del>-</del> |      |
| Post test | Variance<br>Source | Sum of squares | sd | Squares<br>Average | F            | p    |
|           | Between groups     | 1,196          | 3  | ,399               | ,468         | ,705 |
|           | Inside groups      | 81,714         | 96 | ,851               | _            |      |
|           | Total              | 82,910         | 99 |                    | _            |      |

According to the analysis results, there was a significant difference between the answers given by the students in the question "I think Quantum computers are a good development for computer technology" and the part they read (p < .05). There is no difference in the final test (p > .05). With this result, it can be said that the difference between education and training is closed.

**Table 5:** The relationship between students' responses to the question "Internet environment is necessary for virtual reality" and the departments they read

|           | Variance<br>Source | Sum of squares | sd | Squares<br>Average | F    | p    |
|-----------|--------------------|----------------|----|--------------------|------|------|
| Pre-test  | Between groups     | 1,627          | 2  | ,813               | ,699 | ,499 |
|           | Inside groups      | 112,813        | 97 | 1,163              |      |      |
|           | Total              | 114,440        | 99 |                    |      |      |
| Post test | Variance<br>Source | Sum of squares | sd | Squares<br>Average | F    | p    |
|           | Between groups     | ,829           | 3  | ,276               | ,274 | ,844 |
|           | Inside groups      | 96,881         | 96 | 1,009              |      |      |
|           | Total              | 97,710         | 99 |                    |      |      |

According to the results of the analysis, there is no significant difference between the answers given by the students in the question "Internet environment is necessary for virtual reality" and the pre-test and post-test conducted between the readings (p> .05).

**Table 6:** The relationship between students' responses to the question "I believe in the existence of bionic people" and the departments they read.

|           | Variance<br>Source | Sum of squares | sd | Squares<br>Average | F            | p    |
|-----------|--------------------|----------------|----|--------------------|--------------|------|
| Pre-test  | Between groups     | ,354           | 2  | ,177               | ,135         | ,874 |
|           | Inside groups      | 127,646        | 97 | 1,316              | <del>-</del> |      |
|           | Total              | 128,000        | 99 |                    | -            |      |
| Post test | Variance<br>Source | Sum of squares | sd | Squares<br>Average | F            | p    |
|           | Between groups     | 13,119         | 3  | 4,373              | 2,681        | ,051 |
|           | Inside groups      | 156,591        | 96 | 1,631              | -            |      |
|           | Total              | 169,710        | 99 |                    | =            |      |



According to the results of the analysis, there was no significant difference between the answers given by the students in the question "Believe in the existence of bionic people" and the part they read (p > .05). There seems to be a difference in the final test (p = <0.05). With this result, it can be said that difference is realized with the education given.

 Table 7: The relationship between students' answers to the question "I think it's useful to use hologram

technology in education" and the departments they read.

|           | Variance<br>Source | Sum of squares | sd | Squares<br>Average | F     | p    |
|-----------|--------------------|----------------|----|--------------------|-------|------|
| Pre-test  | Between groups     | ,773           | 2  | ,386               | ,373  | ,689 |
|           | Inside groups      | 100,387        | 97 | 1,035              | •     |      |
|           | Total              | 101,160        | 99 |                    | •     |      |
| Post test | Variance<br>Source | Sum of squares | sd | Squares<br>Average | F     | p    |
|           | Between groups     | 8,231          | 3  | 2,744              | 2,250 | 0,87 |
|           | Inside groups      | 117,079        | 96 | 1,220              | •     |      |
|           | Total              | 125,310        | 99 |                    | -     |      |

According to the results of the analysis, there is no significant difference between the answers given by the students in the question "I think it is useful to use hologram technology in education" and the pre-test and post-test between the parts they read (p>.05).

Table 8: The relationship between students' responses to the question "I think Maglev trains will bring new

possibilities to transportation" and the departments they read.

|           | Variance<br>Source | Sum of squares | sd | Squares<br>Average | F     | p    |
|-----------|--------------------|----------------|----|--------------------|-------|------|
| Pre-test  | Between groups     | 1,819          | 2  | ,949               | ,627  | ,536 |
|           | Inside groups      | 146,861        | 97 | 1,514              | •     |      |
|           | Total              | 148,760        | 99 |                    | •     |      |
| Post test | Variance<br>Source | Sum of squares | sd | Squares<br>Average | F     | p    |
|           | Between groups     | 5,709          | 3  | 1,903              | 1,380 | ,254 |
|           | Inside groups      | 132,401        | 96 | 1,379              | •     |      |
|           | Total              | 138,110        | 99 |                    | -     |      |

According to the results of the analysis, there is no significant difference between the answers given by the students in the question "I believe that Maglev trains will bring a new possibility to transportation" and the pretest and post-test between the readings (p > .05).



**Table 9:** The relationship between students' responses to the question "We can read through people's minds with technological development" and the departments they read.

|           | Variance<br>Source | Sum of squares | sd | Squares<br>Average | F     | p    |
|-----------|--------------------|----------------|----|--------------------|-------|------|
| Pre-test  | Between groups     | 7,027          | 2  | 3,513              | 2,462 | ,091 |
|           | Inside groups      | 138,413        | 97 | 1,427              | -     |      |
|           | Total              | 145,440        | 99 | ,                  | -     |      |
| Post test | Variance<br>Source | Sum of squares | sd | Squares<br>Average | F     | p    |
|           | Between groups     | 5,077          | 3  | 1,692              | 1,008 | ,393 |
|           | Inside groups      | 161,163        | 96 | 1,679              | -     |      |
|           | Total              | 166,240        | 99 |                    | =     |      |

According to the results of the analysis, it is shown that there is no significant difference between the answers given by the students in the question "We can read through technological development and people's minds" and between the pre-test and post-test conducted between the readings (p>.05).

**Table 10:** The relationship between students' responses to the question "Radiation is only in movies" and the departments they read

|           | Variance<br>Source | Sum of squares | sd | Squares<br>Average | F     | p    |
|-----------|--------------------|----------------|----|--------------------|-------|------|
| Pre-test  | Between groups     | 9,658          | 2  | 4,829              | 2,258 | ,081 |
|           | Inside groups      | 179,695        | 97 | 1,872              | -     |      |
|           | Total              | 189,354        | 99 |                    | -     |      |
| Post test | Variance<br>Source | Sum of squares | sd | Squares<br>Average | F     | р    |
|           | Between groups     | 1,803          | 3  | ,601               | ,333  | ,801 |
|           | Inside groups      | 173,187        | 96 | 1,804              | -     |      |
|           | Total              | 174,990        | 99 |                    | -     |      |

According to the results of the analysis, there is no significant difference between the answers given by the students in the question "Radiation is only in the films" and the pre-test and post-test between the readings (p> .05).

**Table 11:** The relationship between students' responses to the question "Future technological developments will take the place of teachers" and the departments they read.

|           | Variance<br>Source | Sum of squares | sd | Squares<br>Average | F     | p    |
|-----------|--------------------|----------------|----|--------------------|-------|------|
| Pre-test  | Between groups     | 13,901         | 2  | 6,951              | 4,008 | ,021 |
|           | Inside groups      | 168,209        | 97 | 1,734              | -     |      |
|           | Total              | 182,110        | 99 |                    | -     |      |
| Post test | Variance<br>Source | Sum of squares | sd | Squares<br>Average | F     | p    |
|           | Between groups     | 5,131          | 3  | 1,710              | ,981  | ,405 |
|           | Inside groups      | 167,429        | 96 | 1,744              | -     |      |
|           | Total              | 172,560        | 99 |                    | -     |      |



According to the results of the analysis, it was found that there was a meaningful difference between the answers given by the students in the question "Technological developments in the future" (p < .05). There is no difference in the final test (p > .05).

**Table 12:** The relationship between students' responses to the question "I think that we can register our dreams by taking advantage of technological improvements" and the deportments they read

|           | Variance<br>Source | Sum of squares | sd | Squares<br>Average | F     | p    |
|-----------|--------------------|----------------|----|--------------------|-------|------|
| Pre-test  | Between groups     | ,175           | 2  | ,087               | ,054  | ,948 |
|           | Inside groups      | 157,535        | 97 | 1,624              | _     |      |
|           | Total              | 157,710        | 99 |                    | =     |      |
| Post test | Variance<br>Source | Sum of squares | sd | Squares<br>Average | F     | р    |
|           | Between groups     | 8,689          | 3  | 2,896              | 2,017 | ,117 |
|           | Inside groups      | 137,821        | 96 | 1,436              | _     |      |
|           | Total              | 146,510        | 99 |                    | =     |      |

According to the results of the analysis, there is no significant difference between the answers given by the students in the question "I think that we can register our dreams by using technological improvements" and the pre-test and post-test between the readings (p>.05).

**Table13:** The relationship between students' answers to the question "I usually do research about the future" and the departments they read.

|           | Variance<br>Source | Sum of squares | sd | Squares<br>Average | F    | p    |
|-----------|--------------------|----------------|----|--------------------|------|------|
| Pre-test  | Between groups     | 1,009          | 2  | ,504               | ,516 | ,598 |
|           | Inside groups      | 94,751         | 97 | ,977               | •    |      |
|           | Total              | 157,710        | 99 |                    | •    |      |
| Post test | Variance<br>Source | Sum of squares | sd | Squares<br>Average | F    | p    |
|           | Between groups     | ,357           | 3  | ,119               | ,121 | ,947 |
|           | Inside groups      | 94,393         | 96 | ,983               | •    |      |
|           | Total              | 94,750         | 99 |                    | •    |      |

According to the results of the analysis, there is no significant difference between the answers given by the students in the question "Generally research about the future" and the pretest-posttest made between the reading and the reading (p > .05).



**Table14:** The relationship between students' responses to the question "I think robots will take their place in the future" and the departments they read.

|           | Variance<br>Source | Sum of squares | sd | Squares<br>Average | F     | p    |
|-----------|--------------------|----------------|----|--------------------|-------|------|
| Pre-test  | Between groups     | 9,333          | 2  | 4,666              | 3,393 | ,038 |
|           | Inside groups      | 133,417        | 97 | 1,375              | _     |      |
|           | Total              | 142,750        | 99 |                    | -     |      |
| Post test | Variance<br>Source | Sum of squares | sd | Squares<br>Average | F     | p    |
|           | Between groups     | 10,897         | 3  | 3,632              | 2,391 | ,073 |
|           | Inside groups      | 145,853        | 96 | 1,519              | _     |      |
|           | Total              | 156,750        | 99 |                    | _     |      |

According to the results of the analysis, it was seen that there was a significant difference between the answers given by the students in the question "I think the robots will take place in the future" and the ones they read (p <.05). There is no difference in the final test (p>.05).

**Table15:** The relationship between students' responses to the question "I find the development of technology useful for humanity" and the departments they read.

|           | Variance<br>Source | Sum of squares | sd | Squares<br>Average | F            | p    |
|-----------|--------------------|----------------|----|--------------------|--------------|------|
| Pre-test  | Between groups     | 3,296          | 2  | 1,648              | 1,578        | ,212 |
|           | Inside groups      | 101,294        | 97 | 1,044              | -            |      |
|           | Total              | 104,590        | 99 |                    | -            |      |
| Post test | Variance<br>Source | Sum of squares | sd | Squares<br>Average | F            | p    |
|           | Between groups     | ,897           | 3  | ,299               | ,239         | ,869 |
|           | Inside groups      | 119,853        | 96 | 1,248              | <del>-</del> |      |
|           | Total              | 120,750        | 99 |                    | -            |      |

According to the results of the analysis, there is no significant difference between the answers given by the students in the question "I find the development of technology useful for humanity" and the pre-test and post-test conducted between the readings (p> .05).

**Table 16:** The relationship between the answer given by the students in the question "I would like to make an invention for the benefit of mankind" and the departments they read.

|           | Variance<br>Source | Sum of squares | sd | Squares<br>Average | F     | p    |
|-----------|--------------------|----------------|----|--------------------|-------|------|
| Pre-test  | Between groups     | 1,195          | 2  | ,598               | ,556  | ,575 |
|           | Inside groups      | 104,195        | 97 | 1,074              | •     |      |
|           | Total              | 105,390        | 99 |                    | •     |      |
| Post test | Variance<br>Source | Sum of squares | sd | Squares<br>Average | F     | p    |
|           | Between groups     | 11,646         | 3  | 3,882              | 5,443 | ,002 |
|           | Inside groups      | 68,464         | 96 | ,713               | -     |      |
|           | Total              | 80,110         | 99 |                    | •     |      |



According to the results of the analysis, it was seen that there was not a significant difference between the answers given by the students in the question "I would like to make an invention for the benefit of mankind" and the part they read (p > .05). There seems to be a difference in the final test (p = <0.05). With this result, it can be said that difference is realized with the education given.

**Table 17:** The relationship between students' responses to the question "I believe that technology improves our standard of living" and the departments they read.

|           | Variance<br>Source | Sum of squares | sd | Squares<br>Average | F     | p    |
|-----------|--------------------|----------------|----|--------------------|-------|------|
| Pre-test  | Between groups     | 12,229         | 2  | 6,115              | 3,945 | ,023 |
|           | Inside groups      | 150,361        | 97 | 1,550              | -     |      |
|           | Total              | 162,590        | 99 | •                  | -     |      |
| Post test | Variance<br>Source | Sum of squares | sd | Squares<br>Average | F     | p    |
|           | Between groups     | 1,552          | 3  | ,517               | ,439  | ,726 |
|           | Inside groups      | 113,198        | 96 | 1,179              | -     |      |
|           | Total              | 114,750        | 99 | •                  | -     |      |

According to the results of the analysis, it was found that there was a meaningful difference between the answers given by the students in the question "I think that technology improves our living standards" and the part they read (p < .05). There is no difference in the final test (p > .05).

Table 18: The relationship between the answers given by the students in the question "Robots must be religious"

|           | Variance<br>Source | Sum of squares | sd | Squares<br>Average | F    | p    |
|-----------|--------------------|----------------|----|--------------------|------|------|
| Pre-test  | Between groups     | 2,391          | 2  | 1,196              | ,619 | ,541 |
|           | Inside groups      | 187,399        | 97 | 1,932              | •    |      |
|           | Total              | 189,790        | 99 | •                  | •    |      |
| Post test | Variance<br>Source | Sum of squares | sd | Squares<br>Average | F    | p    |
|           | Between groups     | ,181           | 3  | ,060               | ,031 | ,993 |
|           | Inside groups      | 189,929        | 96 | 1,978              | •    |      |
|           | Total              | 190,110        | 99 |                    | •    |      |

According to the results of the analysis, there is no significant difference between the answers given by the students in the question "The robots should be religious" and the pre-test and post-test between the readings (p> .05).



**Table19:** The relationship between students' responses to the question "I want to be a Ciberian warrior" and the departments they read.

|           | Variance<br>Source | Sum of squares | sd | Squares<br>Average | F    | p    |
|-----------|--------------------|----------------|----|--------------------|------|------|
| Pre-test  | Between groups     | 3,768          | 2  | 1,884              | ,798 | ,453 |
|           | Inside groups      | 229,142        | 97 | 2,362              | •    |      |
|           | Total              | 232,910        | 99 |                    |      |      |
| Post test | Variance<br>Source | Sum of squares | sd | Squares<br>Average | F    | p    |
|           | Between groups     | 5,535          | 3  | 1,845              | ,911 | ,439 |
|           | Inside groups      | 194,425        | 96 | 2,025              | •    |      |
|           | Total              | 199,960        | 99 | •                  | •    |      |

According to the results of the analysis, there is no significant difference between the answers given by the students in the question "I want to be a cyber warrior" and the pre-test and post-test between the readings (p> .05).

**Table 20:** The relationship between students' responses to the question "Cloning an ethical meeting" and the

|           | Variance<br>Source | Sum of squares | sd | Squares<br>Average | F            | p    |
|-----------|--------------------|----------------|----|--------------------|--------------|------|
| Pre-test  | Between groups     | 5,811          | 2  | 2,905              | 1,889        | ,157 |
|           | Inside groups      | 149,229        | 97 | 1,538              | <del>-</del> |      |
|           | Total              | 155,040        | 99 | •                  | -            |      |
| Post test | Variance<br>Source | Sum of squares | sd | Squares<br>Average | F            | p    |
|           | Between groups     | 5,272          | 3  | 1,757              | ,914         | ,437 |
|           | Inside groups      | 184,488        | 96 | 1,922              | -            |      |
|           | Total              | 189,760        | 99 |                    | -            |      |

According to the results of the analysis, there is no significant difference between the answers given by the students in the question "Cloning an ethical meeting" and the pre-test and post-test between the sections they read (p>.05).

**Table 21:** The relationship between students' responses to the question "I have information about telepathic communication" and the departments they read.

| Pre-test  | Variance<br>Source | Sum of squares | sd | Squares<br>Average | F     | p    |
|-----------|--------------------|----------------|----|--------------------|-------|------|
|           | Between groups     | 5,943          | 2  | 2,971              | 2,361 | ,100 |
|           | Inside groups      | 122,057        | 97 | 1,258              | -     |      |
|           | Total              | 128,000        | 99 |                    | -     |      |
| Post test | Variance<br>Source | Sum of squares | sd | Squares<br>Average | F     | p    |
|           | Between groups     | 2,929          | 3  | ,976               | ,200  | ,896 |
|           | Inside groups      | 468,071        | 96 | 4,876              | -     |      |
|           | Total              | 471,000        | 99 |                    | -     |      |



According to the results of the analysis, there is no significant difference between the answers given by the students in the question "Cloning an ethical meeting" and the pre-test and post-test between the sections they read (p>.05).

**Table 22:** The relationship between students' responses to the question "I think that knowledge and technology

|           | Variance<br>Source | Sum of squares | sd | Squares<br>Average | F     | p    |
|-----------|--------------------|----------------|----|--------------------|-------|------|
| Pre-test  | Between groups     | 12,981         | 2  | 6,491              | 3,086 | ,050 |
|           | Inside groups      | 204,019        | 97 | 2,103              | -     |      |
|           | Total              | 217,000        | 99 |                    | -     |      |
| Post test | Variance<br>Source | Sum of squares | sd | Squares<br>Average | F     | p    |
|           | Between groups     | 9,282          | 3  | 3,094              | 1,828 | ,147 |
|           | Inside groups      | 162,508        | 96 | 1,693              | -     |      |
|           |                    |                |    |                    |       |      |

According to the results of the analysis, it is seen that there is a meaningful difference between the answers given by the students in the question "I think that knowledge and technology are effective in forming the future according to Futurism" and the part they read (p = <.05).

**Table 23:** The relationship between students' responses to the question "Doing self-designed designs for future technologies" and the departments they read.

| Pre-test  | Variance<br>Source | Sum of squares | sd | Squares<br>Average | F     | p    |
|-----------|--------------------|----------------|----|--------------------|-------|------|
|           | Between groups     | 3,804          | 2  | 1,902              | 1,092 | ,340 |
|           | Inside groups      | 168,946        | 97 | 1,742              | •     |      |
|           | Total              | 172,750        | 99 |                    | •     |      |
| Post test | Variance<br>Source | Sum of squares | sd | Squares<br>Average | F     | p    |
|           | Between groups     | 6,841          | 3  | 2,280              | 1,378 | ,254 |
|           | Inside groups      | 158,869        | 96 | 1,655              | •     |      |
|           | Total              | 165,710        | 99 |                    |       |      |

According to the results of the analysis, there is no significant difference between the answers given by the students in the question "Doing self-designed designs for future technologies" and the pre-test and post-test between the readings (p>.05).

### CONCLUSION AND DISCUSSION

This study was undertaken to measure the extent to which university students are knowledgeable about the technology of the future and whether they are necessary or unnecessary due to their presence or absence of information. In this context, informational seminars have been given in certain areas concerning the future. At the beginning of this seminar, a questionnaire was filled to determine the future concerns of the students and the same questionnaire (pre-test and post-test) was replenished after the seminar. As mentioned above, it is observed that there is no meaningful change in the opinions of the students in some subjects, as there is a meaningful change between pre - test and post - test in some subjects. Particularly, students are observable concerns about artificial intelligence and robots. In the question-answer section of the seminar, quite a lot of researches about the technology of the future have been observed.

It is also observed that our country is very concerned about the future production of these technologies. Some students have shown that these technologies are utopian and that it is impossible to reach them. It has been observed that many students are disturbed by the fact that technology has entered our lives so much and many of the technological tools are concerned about increasing health problems. It has been observed that many of the



students have developed anxiety that they will increase the electro magnetism diseases they have spread from the device.

The questionnaire of the questionnaire above examined whether there was any difference between the pre-test and the post-test in terms of the section they read in the comment section. It has been observed that there are changes in some subjects when there is no change in some areas.

### **SUGGESTIONS**

In the analyzes to be done later, students should examine the answers given to the questions prepared for each topic in terms of the answers given by the likert items in terms of the pre-test and the post-test, and because there is no information about the subjects for each field, it is necessary to look at the changes in terms of the following answers. Or will we be a spectator? "" It is absolutely necessary for the students of the university teaching department to have an upcoming anxiety.

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