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Contribution of group work and comparative education to students' learning: Analysis of comparative design history course

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Abstract

After the discovery of steam power and machinery, the industry has evolved faster and the designers began to design products for mass production by the influence of concepts. During the "design history" courses, matching periods, designers, and products could be more confusing for students. Those courses are generally taught theoretically and are not implemented as interactively. This study based on "Comparative Design History" course, in which design students work in groups on various topics and match the relevant cases between "design history" and those topics. In this paper, group work, comparative education and its contribution to students learning, will be studied.

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1. Introduction

Group work is an improving learning system due to its enabling style for students to negotiate and share their ideas with other group members. This learning type also supports the development of skills and behaviors which are needed in workplace (Beccaria and et al., 2014). Bormann and Henquinet (2000) define group work as “*an assignment of two or more people interacting with each other and interdependently working together to achieve specific objectives*”. Since for a long time universities have been organizing workshops and group work for making students gain new points of view and prepare them for the business life before graduation.

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Considering that understanding, a group work is conducted at Dogus University, Faculty of Fine Arts and Design, by the participation of the students of Industrial Product Design Department during the “Comparative Design History” course. In this course students work in groups and choose a subject at the beginning of the semester. Every week at the end of the lecture, the instructor declares the next lecture’s time interval to groups, to make them do research in their topics for that period. The following week, after the instructor gives lecture, groups are expected to present the findings of their research. The main aim of the course is while giving students the understanding of the influence of various periods and events on industrial design, also giving them the ability to work in group, do qualitative research, prepare and deliver a presentation.

2. “Comparative Design History” course

“Comparative Design History” course is one of the compulsory courses of Dogus University, Department of Industrial Product Design. The course is 5 ECTS and 3 credits (3 theoretic), language of instruction is Turkish and each fall semester approximately 10 to 35 students enroll the course.

The course focuses on a variety of obvious or concealed factors that are involved in the stages of design, production and usage throughout the creation and development processes of design. The course also focuses on a variety of disciplines that are involved. Socio-economic, socio-cultural, technological and artistic effects are discussed using a comparative approach and interactive methodology, in which causal relations are questioned for the aim of making a synthesis based on the outcome of discussions. The course requires the active participation of the students and is conducted by the use of audio-visual aids to support discussions.

2.1. Aims of the “Comparative Design History” course

The aims of the “Comparative Design History” course are;

- to gain students the understanding of the influence of production on design starting from pre-industrialized period to industrialization,
- to gain the students the understanding of the influence of various periods and events on industrial design,
- to give students information on design periods and designers,
- to gain the students the understanding of the interaction of developments in various places in the same period,
- to gain the students the understanding of periods and the relationship between economic and political developments in those periods with design,
- to give students information on designs and designers, using the information in professional work and apply in products and services,
- to give students the ability to do qualitative research, prepare and deliver a presentation,
- to gain the students executing duties in group endeavors, assume responsibility in the group in verbal, written and visual presentations,
- to gain students the ability of presenting to audience,
- to gain students the ability to critique each other's presentation and findings within the framework of respect.

2.2. Content of the course

The content of the course is determined according to 14 weeks, including 2 midterm exams, presentations and homeworks.

Table 1. Course content.

Week	Content	Homework
1	Information about the course and its objective. Students are provided with keywords for their work in the 2nd week.	Homework 1: Essay 1
2	Traditional Handcraft,	Homework 2: Each groups get a subject;

	Shakers community	architecture, fashion, graphics, painting, photography, technological developments in 1850-1890
3	1850-1890 Industrial Revolution, Arts and Crafts (late 19th century), Groups' presentations (Homework 2)	Homework 3: Essay 2 Homework 4: Each groups choose a brand
4	Industrialization , Mass production, Groups' presentations (Homework 4)	Homework 5: Each groups get a subject; architecture, fashion, graphics, painting, photography, technological developments in 1890-1920
5	1890-1920 Art Nouveau (late 19th –early 20th centuries) Groups' presentations (Homework 5)	Homework 6: Each groups get a subject; architecture, fashion, graphics, painting, photography, technological developments in 1920-1940 Homework 7: Essay 3
6	1920-1940 Modernism, Art Deco, Eileen Gray (1878-1976) Groups' presentations (Homework 6)	Homework 8: Essay 4 Homework 9: Each groups prepare presentations about famous designers
7	Midterm exam 1	
8	De Stijl (Netherlands) Bauhaus (Germany), Groups' presentations (Homework 9)	Homework 10: Essay 5
9	Emergence of professional designers, Standardization, Groups' presentations (Homework 9)	
10	Streamline designs, Groups' presentations (Homework 9)	Homework 11: Essay 6 Homework 12: Essay 7
11	Organic designs, American lifestyle, Groups' presentations (Homework 9)	Homework 13: Essay 8
12	Consumption and technology in the 60's and 70's, Groups' presentations (Homework 9)	
13	The 80's and Postmodernism , Groups' presentations (Homework 9)	
14	Midterm exam 2	

2.3. Formation of groups and selection of topics

Between the years 2009-2013 “Comparative Design History” course had been placed in the 8th semester in the curriculum, but after the revision that was made within the framework of the Bologna Education Program, the course was added to the 3rd semester in the curriculum. The new program began to be implemented in the 2013-2014 Academic Year, and the students of 5th and 7th semesters took that course in conjunction with the 3rd semester students. In 2011-2012 Academic Year 28 students, in 2012-2013 Academic Year 8 students, in 2013-2014 Academic Year 35 students enrolled the course. In this study the processing of that course in 2013-2014 Academic Year is discussed.

During the first lecture the course syllabus and aims of the course were briefly explained to the students. Then the topics were determined by the instructor, also students were encouraged for suggesting new topics. The topics were fashion, music, photography, architecture, technology, economics & politics, painting, cinema & theatre, land transportation vehicles and marine & air transportation vehicles, the last two were suggested by students.

For those 11 topics students tried to organize their group members and selected their topics. Students worked in groups of 3 or 4 members and did research for the periods according to the topics and prepared presentation for sharing their findings with their classmates. Periods were determined as 1850-1890, 1890-1920, 1920-1940, brands which were pioneer in their sector in context of mass production (Midland Railway, Kodak, Ford T, Colt, Coca Cola, AEG, Yildiz Porcelain, Chippendale, Remington Typewriter, Wedgwood, Singer) and famous designers (Gerrit Rietveld, Walter Gropius, Mies van der Rohe, Marcel Breuer, Le Corbusier, Marianne Brandt, Henry Dreyfuss, Norman Bel Geddes, Alvar Aalto, Gio Ponti, Wilhelm Wagenfeld, Peter Behrens, Raymond Loewy, Charles Eames, Joe Colombo, Eero Saarinen, Ettore Sottsass, etc) were selected for the presentations.

Table 2. Group members and topics.

Groups	Group members	Topics
1	3 students (1 female, 2 males)	Land transportation vehicles / Coca Cola
2	3 students (3 males)	Marine & air transportation vehicles / AEG
3	3 students (3 females)	Literature / Yildiz Porcelain
4	3 students (2 males, 1 female)	Economics & Politics / Chippendale
5	3 students (3 males)	Painting / Remington Typewriter
6	4 students (4 females)	Cinema & Theatre / Wedgwood
7	3 students (3 females)	Fashion /Singer
8	3 students (2 males, 1 female)	Music / Midland Railway
9	3 students (3 males)	Photography / Kodak
10	3 students (2 males, 1 female)	Architecture / Ford T
11	4 students (4 males)	Technology / Colt

2.4. Presentations of groups within the framework of the topics per periods

As it is mentioned before the new program (that was revised within the framework of Bologna Education Program) was implemented in the 2013-2014 Academic Year 3rd, 5th and 7th semester students attended the course together. Consequently 35 students from different semesters were in the same class and students were set free during the creation of groups, and almost all groups were comprised of students who wanted to work together. 11 groups were created and those groups were organized for presenting their findings for each week. However, there were 11 groups and due to not having enough time for each presentation, only one brand and 2 periods/topics could be presented by students throughout 14 weeks.

Table 3. Findings of groups

Topics	1850 – 1890	1890 - 1920
Land transportation vehicles	Locomotives, bicycle, automobile	Automobiles, public transportation
Marine & air transportation vehicles	Glider, balloon, ship	Ship, zeppelin, propeller plane,
Literature	Extinction of the impacts of Eastern literature, and formation of the influences of Western literature Poets and authors; Namik Kemal, Ziya Pasa, Ibrahim Sinasi, Ahmet Mithat Efendi,	Servet-i Funun; the influence of the western literature Fecr-i Ati; individualism, the influence of French literature, continuation of Servet-i Funun

	Semsettin Sami, Ahmet Vefik Pasa,	National literary movement; the idea of nationalism, social issues Poets and authors; Tevfik Fikret, Cenap Sahabettin, Mehmet Akif Ersoy, Halit Ziya Usaklıgil, Huseyin Rahmi Gurpınar, Ahmet Rasim, Mehmet Rauf
Economics & Politics	Industrial Revolution, Factories, Working class Mass production, General Electric	1 st World War, Decline in production and economy
Painting	Realism; Jean-Francois Millet, Gustav Courbet Impressionism; Édouard Manet, Edgar Degas, Claude Monet Symbolism; Edvard Munch, Post impressionism; Paul Cezanne, Paul Gauguin, Vincent van Gogh	Art Nouveau; Gustav Klimt Fauvism; Henri Matisse Expressionism; Wassily Kandinsky Cubism; Pablo Picasso, Georges Braque Surrealism; Salvador Dali
Cinema & Theatre	Independent theatres in France, Germany, UK and Western theatre's influence on Ottoman theatre Invention of cinematograph and short films	Silent films
Fashion	underskirt with many frills and pleats, women's skirts were made fuller by flounces (or big ruffles)	fashion began to evolve, 1870-1880; bustle (the decoration and clothing focused on a woman's backside) period; ruffles, pleats and new colors that were vibrant, 1880s; second bustle period; heavily decorated and more stylish dresses, more vibrant colors, jewels, beads, and different materials such as satin, velvets, and silks, 1890-1920; corsets to make waists smaller
Music	Late Romantic Period; Liszt, Wagner, Verdi, Schumann	Impressionist composers; Debussy Jazz
Photography	Portrait photographs, black & white	Artistic camera images, Personal cameras; Kodak, Leica
Architecture	Iron and glass; Chrystal Palace	Art Nouveau; asymmetrical shapes, extensive use of arches and curved forms, mosaics Charles Rennie Mackintosh, Antoni Gaudi
Technology	Steam power, Edison-light bulb Invention of typewriters, bicycles, sewing machines, harvesters, weapons	Significant improvements in "Science and Technology" invention of escalators, x-ray, movie machine vacuum cleaner, radio broadcasting, first powered flight, the theory of relativity, the mass production of automobiles, stainless steel, the first robot

In Table 3, findings of groups are analyzed in context of periods and topics. Table is formulated based on the keywords that were mentioned by the students during the presentations. After the instructor's presentation about design history, the groups' presented their research and then the course continued interactively. Discussions, comparisons and analysis were made during the presentations. Use of abundant visual and audio materials allowed

making comparison effective. Below, there are examples of visual materials used for the presentations of the period 1850-1890.

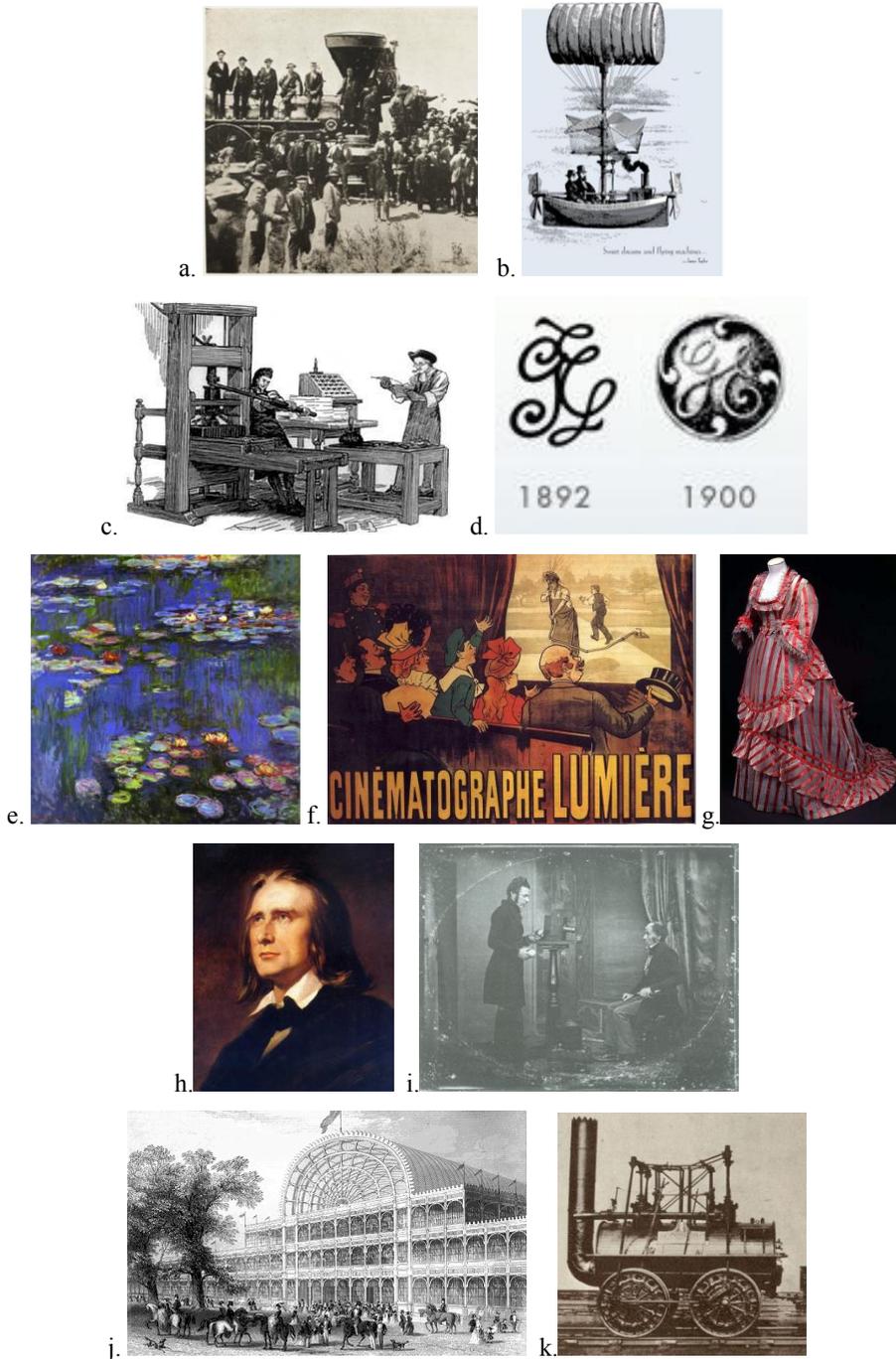


Fig. 1. (a) Land transportation vehicles; (b) marine & air transportation vehicles; (c) literature; (d) economics & politics (General Electric); (e) painting (Claude Monet); (f) cinema & theatre; (g) fashion; (h) music (Liszt); (i) photography; (j) architecture; (k) technology.

As it is seen from the figures used in the presentations -though they were presenting different topics, but the same period- the characteristics' of the figures are similar. Such as, if the clothes of males and females in the figures are analyzed; the characters in photography, music, cinema & theatre, fashion carry the same features. Additionally, if the figures a, b, c, d, i, j, and k are analyzed, it could be said that machinery, production, industry are the developing fields in that period. During the presentations, the keywords –mentioned in Table 3- and the figures matched with the design history, and students gained the ability to evaluate all events together.

3. Evaluation of group work and comparative education

As a basis for students' design education "Comparative Design History" course is one of the most important courses in Industrial Product Design curriculum. The course is associated with approximately 50% of the program outcomes;

- Conceive the relationship between art and design, know historical process of design and be informed about the interaction of industrial design with other design fields.
- Be informed about architecture, engineering, business administration, law, graphics, communication, psychology, sociology as fields related to industrial designs mandated by its interdisciplinary nature.
- Internalize theoretical and applicative information about industrial design; be able to apply these on products and services.
- Executing duties in individual / group endeavors, assume responsibility according to product design and production, produce ideas and apply.
- Work in harmony with professionals of closely or remotely related disciplines to design, able to express ideas and opinions in visual, verbal and written forms.

One of the most important aims of the course is; to gain the students the understanding of the influence of various periods and events on industrial design. As Boix Mansilla and Gardner (2000) define, interdisciplinary understanding is; *"the capacity to integrate knowledge and modes of thinking in two or more disciplines or established areas of expertise to produce a cognitive advancement—such as explaining a phenomenon, solving a problem, creating a product—in ways that would have been impossible or unlikely through single disciplinary means"*.

One of the aims of that course is encouraging students for working in groups and sharing their ideas with audiences. People especially prefer working by their own, instead of working in a group, cause in groups they have to collaborate on shared tasks and that require more responsibility for the work. Race (2000) determines the benefits of group work as; students gain social learning experience, make friends, get more feedback about the learning process, understand better complicated problems, learn better by sharing knowledge with others, gain skills that will support their professional life (leadership), improve their CV.

Beside those, in group work, while sharing ideas, conflict can arise from the predispositions of individuals, their personal goals, attitudes and previous experience. Conflict is an essential part of the group work, but it needs to be managed by the partners or by the supervisors' of the project (Robinson, 2013). As conflict, frustration is another negative side of group works. Lack of participation or imbalance in the contribution is the source of frustration in group works (Burdett, 2003).

In group works it is very usual to experience conflicts and frustrations, since all participants have their own characteristics that they bring to the group. That is the basic characteristic of the group work; different ideas, disagreements, conflicts, make the work much more qualified. In this course, it was intended to make students, to be extrovert, to share ideas in a group, to take responsibility, to gain a viewpoint in different topics. However as it was seen in that course, in some cases group work could be less effective than it was expected (such as only one group member prepared the presentation, or only one group member presented the findings), in those cases students could be taught how to act in a group work.

Unfortunately, as Gatfield (1999) states; one of the major difficulties of group work projects is the awarding of marks by the instructor. The members of the groups began to worry about their marks, and complained about the

other group members. Finally cause of lack of communication and willing to get high marks, hardworking students tried to do incurious members out of group, and prepared their own presentation. Briefly, new groups were formed within the previous groups.

4. Conclusion

Teaching method of theoretical courses varies depending on the presentation skills of the instructor, capacity of students and the novelty of the course. Long course hours could lose students' interest and engaging students' interest could be a new challenge for instructors.

Firstly, as it is seen in this study, making students work in groups and do presentations could keep students interest alive. Students gained a vision of establishing a link between the events and design history by analyzing and comparing the developments that were experienced at the same time in different fields. However, the formation of groups, distribution of tasks in groups, oblivious group members and concern of taking high marks were the negative sides of the group works. The outcomes that were obtained from that study are;

- If the students from different classes are attending the course, students should be set free for selecting their groups. Otherwise it could be troublesome for the group to find appropriate time or to communicate with each other. But also it could be seen as a challenge and having new friends could be a benefit of the group work.
- If the instructor forms the groups and determines the group members, then the groups have to be determined at the beginning of the semester and enough time have to be given groups to socialize and know each other's skills.
- The instructor should evaluate all group members' work individually, talk with all members and should not give common mark for the group work.
- For the comparative study, students' presentations should go parallel with the course content; otherwise, after a while students could begin to do presentations at different times, and periodic comparisons could not be done properly.

As the study evaluated within the context of "Comparative Design History" course that is handled in this paper, it is seen that students gain the ability to do research in a specific topic, present findings to audiences and the ability to establish a cause-effect relationship between periodical events.

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