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Case-Technology in Higher Education: Possibilities of Application in Design-Education

By

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Abstract

The demand for design services is growing exponentially. In conditions of high competition in the labor market, more stringent demands and requirements for training specialists from employers, a future designer must have deep theoretical and practical training for professional activities in order to flexibly respond to any changes and creatively approach the performance of professional tasks [1]. The solution to this problem can be an arsenal of case-technology. Its application allows realizing problem learning, assessing the formation of competencies (the ability to work in a team, the ability to self-organize and self-education, the ability to search, store, process and analyze information, the ability to put forward original solutions in creative activity) [2].

The article discusses the prospect of using case-technology in design education in higher education for the professional training of undergraduate students. The research work revealed the professional qualities of future specialists in the field of design, formed during training on this technology, presented methodological recommendations for organizing classes in the “Photographic” module within the framework of the “Design Basics” discipline. Photographic appears in this study as a modern type of visual art, capable of developing project thinking among design students in integration with graphic design [3].

Keywords: case-technology, design education, bachelor-designers, photographic, project culture.

1. Introduction

Nowadays, it is important for a design specialist to solve professional problems in an unconventional and creative way in a competitive market. At the same time, the introduction of educational standards of the third generation for higher educational institutions posed the problem of finding optimal teaching technologies for organizing the educational process in new conditions for practicing teachers [4]. One of these technologies is a case-study, which can develop the design thinking of future designers [5].

For the development of project thinking, students need not only special knowledge, skills and abilities, but also the acquisition of initial professional experience. It is impossible to create conditions for the organization of an appropriate educational process, involving the mastering by students of the basics of pre-profile and professional activities, without using active and interactive learning technologies [6].

Case-study is a pedagogical technology based on modeling a professionally significant situation in order to identify the main problems and search for possible solutions to eliminate them. It integrates theory and reality with difficulties into educational tasks that are discussed and solved in small groups, while the theoretical part is not accompanied by examples, but lends itself to study in the process of analyzing examples [7].

The main goal of this technology is the formation of a thinking model capable of recognizing situations similar to those that have been encountered before, and based on it, making the most optimal decisions to resolve the identified problems. The case-technology is focused on solving the following tasks:

- mastering the skills and techniques of the aggregate analysis of the situation from the sphere of professional activity;
- the ability to make up for the lack of knowledge with additional information required to clarify a given situation;
- acquisition of skills in applying theoretical knowledge to solve practical problems;
- development of decision-making skills in situations with the nature of uncertainty;
- acquisition of the skills of a clear presentation of one's own point of view;
- convincing presentation, substantiation and defense of one's own point of view, in other words, developing the ability to make a presentation;
- development of skills for constructive critical assessment of the views of other people;
- the ability to make independent decisions based on group analysis of the situation [7].

The developed module “Photographic” is based on the step-by-step execution of case-tasks, which represent a problem situation, offered to students as a task for analysis and search for a solution - the development of visual support for a certain company, brand.

The presence of well-developed cases in the arsenal of bachelor-designers will make it possible to use the established scheme for solving a problem in a certain situation, and will form the skills of solving more complex problems. In the process of future professional activities, students will be able to apply the obtained analysis of a normal work situation and problem solving in similar cases; this is the reason for the use of this technology in design education [8].

2. Methods

In the course of the experimental work, among the methods used in practical tasks (exercises) for students, the following methods were identified: case-technology method (basic); immersion method; explanatory-illustrative method; method of solving creative problems; demonstration method; search method; problematic method; research method; brainstorm; heuristic method; control-diagnostic method.

3. Results And Discussion

The cases designed in the course of the study formed the basis of the author's development, which is a set of tasks that is implemented in the "Photographic" training module in the "Design Basics" discipline.

Individual cases were presented in the form of design projects, the topics of which were determined from the specifics of the analysis of the services sector that is currently relevant. The content of the case includes:

- an annotation in the form of a possible real order for the visual design of the brand (the interests of the client are described, and recommendations are given to prevent a large number of edits);
- a set of branded products required for a "potential customer";
- a description of the visual presentation of the intermediate and final versions of the project.

The work with the case is carried out by students in stages:

The first stage is acquaintance with the situation described in the case.

The second stage is the identification of facts that indicate the problem(s), highlighting the main and secondary problems, building a hierarchy between them.

The third stage is the generation of options for solving the problem (developing a collage to convey the concept, creating options for logo sketches, developing several options for branded products); the brainstorming is possible.

The fourth stage is the assessment of each possible result and analysis of the consequences of making decision (development of the required list of products in constant relationship with the existing concept).

The fifth stage is the approval of the final solution of the case, for example, a list of actions or a sequence of actions (collecting the best options for solving the case into a single album).

The sixth stage is the presentation of individual or group solutions and mutual discussion (presentation of the album and justification of your own point of view).

The seventh stage is summing up the results under the guidance of a mentor (discussing the solved cases).

Table 1 clearly shows how the stages of the case presented in the form of a project relate to the program for the implementation of the case technology in the "Photographic" module.

Class	Case stages	Content	Form	Means	Methods	Result
1	1, 2	Introduction to working with case studies	Lecture-conversation	Visual (presentation illustrative material), technical (computer class)	Immersion, explanatory-illustrative	Development of constructiveness and consistency
2	3, 4	Moodboard as the basis of the project concept	Case solution	Photo material (samples of printed publications, photos from the Internet)	Case-technology, search, research, brainstorming	Development of research skills, creative imagination, flexibility and laterality of thinking, independence
3	3, 4	Logo creation	Case solution	Technical (computer class, computer programs)	Case-technology, problematic, search, method of solving creative problems, brainstorming	Development of creative imagination, originality, flexibility and laterality of thinking, imagery, problem solving skills and independence
4	3, 4	Refinement of the logo, selection of the font and color palette	Case solution	Technical (computer class, computer programs)	Case-technology, problematic, search	Development of research skills, flexibility of thinking, imagery, problem solving skills
5	3, 4	Design of branded products	Case solution	Technical (computer class, computer programs)	Case-technology, search, research, method of solving creative problems	Development of research skills, creative imagination, originality, flexibility and laterality of thinking, problem solving skills and independence
6	3, 4	Design of branded products	Case solution	Technical (computer class, computer programs)	Case-technology, search, research, method of solving creative problems	Development of research skills, creative imagination, originality, flexibility and laterality of thinking, problem solving skills and independence

7	3, 4	Graphic content creation	Case solution	Technical (computer class, computer programs)	Case-technology, problematic, search, method of solving creative problems, brainstorming	Development of research skills, consistency, creative imagination, originality, flexibility of thinking
8	3, 4	Graphic content creation	Case solution	Technical (computer class, computer programs)	Case-technology, problematic, search, method of solving creative problems, brainstorming	Development of research skills, consistency, creative imagination, originality, flexibility of thinking
9	5	Album creation	Case solution	Technical (computer class, computer programs)	Case-technology, heuristic	Development of constructiveness, consistency, independence
10	6, 7	Design project presentation	Case solution	Technical (computer class, computer programs)	Case-technology, demonstration, control-diagnostic	Development of independence, self-presentation skills, substantiation of one's own point of view

Table 1. Technology implementation program (for 10 lessons).

Criteria-valuation system of the case: analysis of the design problem; creativity of the solution; independence of decision making; the accuracy of the choice of materials and tools; novelty; compositional solution; metaphor and associativity; technical performance; the accuracy of the choice of photography; completeness of the implementation of the design concept.

In order to test the effectiveness and approbation of case-technology in the development of project thinking among design students, on the basis of Kazan Federal (Volga Region) University, an experimental work was carried out, the participants of which were students of two identical groups of the 1st course; training direction 54.03.01 "Design". One of the selected groups became the control group (CG - 8 people), the other - experimental (EG - 10 people). The respondents of the control group were trained according to the traditional model, and in the experimental group we used the methodological techniques developed by us within the framework of the case-technology for the development of project thinking among design students by means of photography in the form of the "Photographic" module.

After conducting the initial diagnostics, the idea was formed that the project thinking of students in both groups was not developed at a sufficient level. The case-technology was chosen as an educational method, since its potential correlates with the possibilities of developing the components of project thinking. After passing all the stages, a final diagnosis was carried out and the level of development of project thinking among design students was determined.

After a set of activities, the students of the experimental group underwent positive changes, which suggest that the methodological techniques developed by us with the use of predominantly case-technology fulfilled the assigned tasks.

4. Summary

The analysis of the intermediate results obtained allowed us to conclude that the use of case-technology contributed to the development of project thinking of students, the formation of their ability to determine the associative array for the generation of non-standard ideas and the correct construction of independent work in the professional field. The feeling of fulfilling a real order contributed to a more active involvement of students in the research and creative process [9].

Photographic expands the boundaries of vision and thinking, being a powerful communication channel for conveying information, history and ideas. Despite the priority role of photographic in the visual communication of modern society, it has great pedagogical potential, and its tools can become one of the means of teaching university students [10]. The advantage is the formation of students' own creative language, adapted to future professional activities, as well as the development in practice of the patterns of image expressiveness through photographic technology [11]. The implementation of photographic tools into design education presupposes a professional mastery of a wide range of artistic and graphic means and methods that make it possible to create works of graphic design and projects of any complexity at a high artistic level - from a mono-composition of a simple sign form to a difficult complex of objects that form a visual information environment [12].

The most effective indicators of the experiment: a decrease in the number of students with a basic level in favor of an increase in the overall percentage of students with a professional level in the experimental group. Students' interest in the solutions of educational and professional tasks presented in the form of cases has significantly increased, the level of independence and self-control has changed, and the level of the creative criterion of project thinking has significantly increased. The overwhelming majority of students learned to understand the specification of design activities, to apply and implement photographic tools in the field of graphic design in solving professional problems.

5. Conclusions

With use of case-technology in the learning process, students acquire the ability to work with information, apply methods of analysis and synthesis, develop skills of teamwork, self-organization and self-expression, form their own creative manner, and most importantly, develop an algorithm for solving real professional problems.

The case-technology is highly adaptable to the professional training of art and design students. The degree of reality is transformed into the form of a typical learning situation for practicing the automatism of skills in finding solutions. The acquired knowledge, skills and abilities are effectively used outside the educational space within the framework of professional activities.

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