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## THE USE OF CASE-STUDY AT MEDICINES QUALITY CONTROL DISCIPLINE STUDYING

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The article discusses one of the effective forms of learning technologies - problem-situational learning using case studies - Case study. The advantages of this method are noted, recommendations for the development of case tasks are given. An example of the use of Case study in the study of the discipline Quality Control of medicines, as well as examples of cases, is given.

*Key words:* case, case method, case study

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Innovative methods and technologies are increasingly being introduced in the modern education system strengthening the practical orientation of vocational education to establish an exceptional connection between theoretical positions and professional actions of specialists in this field and to activate the intellectual and creative activity of students. One of the effective technologies forms is problem-based learning using case studies.

The essence of this method lies in the assimilation of knowledge and formation of skills through the active independent activity of students themselves to resolve contradictions as a result there is a creative mastery of professional knowledge, skills, abilities and the development of mental abilities.

Pierre Guillaume Frederic Le Play (1855), a mathematician and natural scientist, is considered as the founder of case study method as he used it for the first time in his publication *Les Ouvriers Europeens* [4].

The case method was developed at Harvard University (USA) in the 20-30s of the 20th century and became widespread in the second half of the last century in the field of business education when well-known lecturers developed and put into practice the so-called methods of active learning [4].

The case-study method or the method of specific situations (from the English case - case, situation) is a method of active problem-situational analysis based on learning by solving specific problems - situations (case solving). Students are offered to comprehend a real life situation the description of which at the same time reflects not only some practical problem but also actualizes a certain set of knowledge that needs to be learned when solving this problem. At the same time, the problem itself does not have unambiguous solutions. The solutions proposed by students can be evaluated by the degree of effectiveness, by the degree of risk, by the validity of the decision, by the cost of resources, but at the same time, a variety of solutions will be correct corresponding to

the task. Thus, educational material is presented to students in the form of situations (cases) and knowledge is acquired as a result of active and creative work: independent goal-setting, collection of the necessary information, its analysis from different points of view, hypotheses, conclusions, conclusions, self-control of obtaining knowledge process and its results.

Depending on the didactic goals and material content features in the educational process the case method can be applied in the form of various situations.

**1. The situation – illustration.** A specific example from practice demonstrates the regularity or mechanism of occurring phenomena, the effectiveness of using certain techniques, methods and analysis methods.

**2. The situation – assessment.** Students are offered a description of a specific event and actions. Their task is to assess the sources, mechanisms, significance and consequences of the situation and taken measures or actions of an official or a team. For example, students are invited to analyze a description of a specific case and corresponding measures on a part of officials. On the basis of a comprehensive study of the situation students should assess the correctness (incorrectness) of their actions and offer their own version.

**3. The situation – exercise.** In this case, the analysis of the situation requires students to refer to special sources of information, literature, reference books and conduct research work. Students are divided into groups of 3-5 people and study the situation. They prepare a list of questions related to the situation and pass them on to their teacher. Having received answers, having studied the information, students develop an action plan, draft decisions, forecasts of the final result.

**4. The situation – problem.** With the appropriate selection of material and correct formulation of classes the situation - problem can serve as an illustration, and an exercise and a means of transferring experience. The situation -

problem is presented to students in the form of a problematic task that really existed or faced in practice [1].

The main objectives of the case study method are the following:

1. training in analysis and evaluation
2. application in practice of theoretical material
3. presentation of decisions and their consequences
5. formation of professional skills.

How to develop a case? There are a number of typical steps for creating a Case:

1. Definition of the topic and study question;
2. The choice of the study object;
3. Definition of context;
4. Planning a case study, collecting material and analyzing the material;
5. Search for solutions, discussion of possible scenarios for the further development of the situation;
6. Description and editing of the case;
7. Formulation of questions for further discussion of the situation [3].

If to compare the case-study method with the traditional methods used in higher education pedagogy we can find a number of advantages. As a result of applying this method the student receives not only certain knowledge but also the skills of professional activity. The end result of learning in it is not aimed at mastering ready-made knowledge but at its development. The main difference between the case-study method and traditional methods lies in the equality of students between themselves and the teacher in the process of discussing the problem. With the help of this method students have an opportunity to demonstrate and improve their analytical and evaluative skills, learn how to work in a team and find the most rational solution to the problem.

The use of the case-study method in teaching bachelors of Pharmacy contributes to the quality training of a competitive specialist. This method, along with other active teaching methods, is used by us in the study of a discipline "Medicines Quality Control". We develop small training cases for students and questions for them which we distribute directly at the practical lesson. Students are divided into small groups of 5-6 people and work with cases collectively offering their own and listening to other options for solving a problem situation. Each student offers options based on his/her knowledge, practical experience and intuition. Thus, the group receives several solutions and each of which then begins to analyze and check for reliability. Cases in the solution of which it is necessary to conduct a chemical examination are very popular among students. Examples of such cases:

**Case 1.** Nitrofurantoin (synonymous with Furacilin) is a drug that has an antimicrobial effect and can be used both internally and externally. It has an antiseptic and antibacterial effect on many pathogenic microorganisms. After using Nitrofurantoin in the treatment of purulent tonsillitis, patient Ivanov I. complained of itching and peeling of the

skin in the neck and hands. The remaining tablets were sent to the control analytical laboratory for examination.

Questions for the case:

1. Supposed cause?
2. Does the quality of the drug correspond to the one declared in the normative document?
3. Suggest a way out of the situation.

**Case 2.** A pharmaceutical plant in Shymkent purchased a tartaric acid substance for the manufacture of effervescent tablets, however, during the production of a trial batch of tablets, it was found that the tablets exhibit weak effervescent properties and low solubility in water. The substance of tartaric acid was sent to the control analytical laboratory for examination.

Questions for the case:

1. Where is the mistake made?
2. Does the quality of the substance correspond to that declared in the RD?
3. Suggest a way out of the situation.

In solving these cases, students are given the opportunity to feel like experts in control and analytical laboratories. Such cases not only develop students' skills of analytical thinking, teamwork, reasoned expression of their opinion, but also encourage them to perform laboratory work, thereby developing practical skills in conducting qualitative and quantitative analysis, working with instruments, etc.

After conducting classes on this method we held a survey of students which showed the following results: 98% of students liked working with case situations, 100% agreed that the cases proposed for solving were accessible and understandable in content.

Thus, we were once again convinced that the use of such active methods of teaching increase the interest of students in classes, activates their activities, leaving no student passive, and also increases the motivation of students to study the discipline Medicines Quality Control. In addition, we can say that the development of a practical action model is an effective means of forming the professional qualities of trainees.

### REFERENCES

1. Arystanova, T.A., Ordabaeva, S.K. Metodicheskie rekomendatsii dlia provedeniia SRSP i rubezhnogo kontroliia po farmatsevticheskoi khimii metodom «Analiza konkretnykh situatsii».- Shymkent. -2010.- 34 s.
2. Higgs, H. Frédéric Le Play//The Quarterly Journal of Economics. vol. 4.-1890 № 4.- P 408–33.
3. Ianova E.P. Ispolzovanie «keis-metoda» v shkolnom kurse geografii// Psikhologiiia i pedagogika: metodika i problemy prakticheskogo primeneniia.- 2016.- №49-1.- S.170-177.
4. Temina, S.Iu. Keis-metod: aktivnoe obuchenie priniatiiu professionalnykh reshenii // Srednee professionalnoe obrazovanie.- 2010.- №1.- S.44-46.

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## Медицинское и фармацевтическое образование

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*ИСПОЛЬЗОВАНИЕ CASE-STUDY ПРИ ИЗУЧЕНИИ ДИСЦИПЛИНЫ КОНТРОЛЬ КАЧЕСТВА ЛЕКАРСТВЕННЫХ СРЕДСТВ*

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В статье обсуждается одна из эффективных форм технологий обучения -проблемно-ситуативное обучение с использованием кейсов - Case study. Отмечены преимущества данного метода, даны рекомендации по разработке кейсовых заданий. Приведен пример использования Case study при изучении дисциплины Контроль качества лекарственных средств, а также примеры кейсов.

*Ключевые слова:* кейс, кейс-метод, Case study

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*ДӘРІЛІК ЗАТТАРДЫҢ САПАСЫН БАҚЫЛАУ ПӘНІН ОҚУДА CASE-STUDY ҚОЛДАНУ*

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Мақалада оқыту технологиясының тиімді түрлерінің бірі-кейстерді қолдана отырып проблемалық-ситуациялық оқыту – Case-study талқыланады. Бұл әдістің артықшылықтары атап өтілді, кейс тапсырмаларын әзірлеу бойынша ұсыныстар берілді. Дәрілік заттардың сапасын бақылау пәнін оқуда Case-study қолдану мысалы, сондай-ақ кейстердің мысалдары келтірілген.

*Кілт сөздер:* жағдай, жағдай әдісі, кейс-стади