



УДК 378.146

**MODEL OF USAGE OF EDUCATIONAL TASKS IN THE PROCESS OF PROFESSIONAL TRAINING OF FUTURE DOCTORS IN SURGERY**  
**МОДЕЛЬ ВИКОРИСТАННЯ НАВЧАЛЬНИХ ЗАВДАНЬ В ПРОЦЕСІ ПІДГОТОВКИ МАЙБУТНІХ ФАХІВЦІВ З ХІРУРГІЇ**

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*The work is devoted to the problem of improving the process of teaching the discipline "Surgery" to students of DNMU - future doctors - with the help of a system of special tasks aimed at working out the formed knowledge and skills, their consolidation and control.*

*The object of the research is the process of professional training of students at the Donetsk National Medical University (DNMU).*

*The subject of the research is the methodology of using educational tasks in the process of professional training of future doctors in surgery.*

*The purpose of the study is to theoretically substantiate and develop a methodology for the application of educational tasks in the process of professional training of future doctors in surgery.*

*The paper defines the features of the organization and implementation of the process of professional training of future doctors in the discipline "Surgery"; the degree of elaboration of the issues of application of educational tasks in universities was determined; substantiated and developed a model for the application of educational tasks in the process of professional training of future doctors in surgery; developed and experimentally tested the effectiveness of the methodology for the use of educational tasks in the process of professional training of future doctors in surgery.*

**Key words:** *model, tasks, surgery, tests, medical education.*

### **Introduction.**

Model (from the Latin words *modus, modulus*) means measure, image, method. A model is an auxiliary object that is in a certain correspondence to the object being studied (the original) and is more convenient for studying the original. Reflecting certain features of the behavior of the original object, the model has some features identical to the original, and is used to obtain information about the original that is difficult or impossible to obtain by directly examining the original. The model is a personal representation of the researched object, a peculiar form of encoding information about the object.

### **Main part.**

Thus, it can be mentioned that a model is an object of any nature, which during research is able to replace a real existing object in order to obtain new information about it. Models are a form of abstraction of a special kind, in which the essential relations of the object are fixed in connections that are visually perceived and imagined. This is a kind of unity of the individual and the general.



The following procedures are inherent in pedagogical modeling:

- entry into the process and selection of methodological bases for modeling, qualitative description of the research subject;
- formulation of modeling tasks;
- construction of a model with clarification of the dependence between the main elements of the object under study, definition of the object's parameters and criteria for evaluating changes in these parameters, selection of measurement methods;
- study of the validity of the model in solving the tasks;
- application of the model in a pedagogical experiment;
- meaningful interpretation of modeling results.

Thus, a certain combination of various educational tasks promotes the activation of students' cognitive activity at any stage of training, active assimilation of educational material ensures the quality of its assimilation and makes training effective.

Questions, problems, assignments, tests are means by which learning methods are implemented, such as: conversation (traditional, reinforcing, controlling), survey, performance of tasks (in particular, work with textbook text), testing, etc.

So, we will give examples of developed educational tasks in surgery (the topic «Acute inflammatory diseases of the abdominal organs (acute appendicitis)») for future doctors with the aim of consolidating and systematizing the acquired knowledge and skills, as well as - monitoring the academic performance of students of the relevant specialty.

1. Relevance of the topic. Acute appendicitis is an acute inflammation of the appendix appendix, caused by the penetration of pathogenic microflora into its wall. Acute appendicitis is the most common acute surgical disease of the abdominal cavity. It is revealed in 7-12% of the population of highly developed countries of the world. The frequency of the disease decreases with age. Thus, after birth it is 15%, while at the age of 50 it is only 2%. Acute appendicitis is diagnosed in more than 50% of patients admitted to surgical departments urgently. In the structure of urgent surgical interventions, appendectomy takes 80-85%. The clinical course of acute appendicitis is diverse, which leads to diagnostic errors. Postoperative mortality is 0.1-0.3% (mainly in destructive forms of appendicitis).

## 2. Specific goals

- learn the anatomical and physiological features of the worm-like process and its location options;
- to know the etiology, pathogenesis of the disease and its classification;
- to know the typical clinic of acute appendicitis and features of the course in children, pregnant women and elderly patients;
- to know the typical clinic of complications of acute appendicitis;
- learn the differential diagnosis with other acute diseases of the organs of the abdominal cavity, extraperitoneal space and chest;
- to know modern methods of diagnosis of acute appendicitis, its complications and the principles of their treatment, including pre- and postoperative periods.

Be able to:



- draw up an individual scheme of diagnostic studies, including anamnesis collection, examination, palpation, percussion, auscultation;
- choose from the anamnesis the indications most characteristic of acute appendicitis (acute onset, Volkovych-Kocher symptom, constant nature of pain in the right iliac region);
- correctly evaluate the data of the physical examination (local pain, presence of defense in the right iliac region, positive symptoms of Rovzing, Sytkovsky, Bartomje-Michelson, Shchotkin-Blumberg, etc.);
- draw up a plan for examination of patients;
- analyze the results of laboratory and other additional examination methods;
- prepare patients for operative treatment;
- write a medical history;
- managing patients in the postoperative period;
- perform general medical manipulations: bandages, introduction of medical drugs through drains into the abdominal cavity, removal of drains, removal of sutures;
- make a forecast of life and working capacity.
- use educational and scientific literature to solve professional tasks, increase the level of professional training;
- use deontological communication skills with patients.

Basic knowledge, abilities, skills necessary for studying the topic (interdisciplinary integration).

List of questions to control knowledge on the topic:

1. Anatomical and functional information about the cecum and appendix.
2. Methods of examination of patients with acute appendicitis.
3. Acute appendicitis clinic.
4. Etiology and pathogenesis of acute appendicitis.
5. Differential diagnosis of acute appendicitis.
6. Features of the course of acute appendicitis in children.
7. Features of the course of acute appendicitis in pregnant women.
8. Peculiarities of the course of acute appendicitis in senile and elderly patients.
9. Complications of acute appendicitis.
10. Appendicular infiltrate (clinic, diagnosis, treatment tactics).
11. Appendicular abscess of the right iliac cavity (clinic, diagnosis, treatment tactics).
12. Pilephlebitis (clinic, diagnosis, treatment tactics).
13. Subdiaphragmatic abscess (clinic, diagnosis, treatment tactics).
14. Technique of typical appendectomy.
15. Laparoscopic appendectomy.
16. Peculiarities of operative technique depending on the form of acute appendicitis and placement of the worm-like process.
17. Type of access and volume of surgical intervention in various complications of acute appendicitis.
18. Complications during appendectomy.
19. Complications of appendectomy in the early and late postoperative period.



## 20. Management of the postoperative period.

Practical tasks on the topic are:

- to collect anamnesis and correctly assess the Volkovich-Kocher symptom;
- to conduct a physical examination of all organs and systems;
- to assess pulse and blood pressure indicators;
- to assess the presence, localization and degree of tenderness and defense of the muscles of the front abdominal wall and lumbar area in the proper way;
- to demonstrate Rovzing's symptom and evaluate its severity (negative, weakly positive, positive, strongly positive);
- to demonstrate Sitkovsky's symptom and evaluate its severity (negative, weakly positive, positive, strongly positive);
- to demonstrate Volkovich's symptom and evaluate its severity (negative, weakly positive, positive, strongly positive);
- to demonstrate Bartomier-Michelson's symptom and evaluate its severity (negative, weakly positive, positive, strongly positive);
- to demonstrate Shttkin-Blumberg's symptom and evaluate its severity (negative, weakly positive, positive, strongly positive);
- to demonstrate Yaure-Rozanov's symptom (retrocecal location of the process) and evaluate its severity (negative, weakly positive, positive, strongly positive);
- to demonstrate Couto's symptom (retrocecal location of the appendage) and evaluate its severity (negative, weakly positive, positive, strongly positive);
- to interpret the results of laboratory and instrumental studies (x-ray, ultrasound, CT);
- to determine complications of acute appendicitis and appendectomy;
- to make an individual diagnostic program;
- to determine indications for surgical intervention;
- to assist in the performance of appendectomy and perform separate stages of surgical intervention;
- to draw up an individual program of postoperative management of the patient;
- to make bandages;
- to take care of drainages;
- to remove stitches;
- to drain and wash the stomach;
- to do a cleansing enema;
- to intravenously inject drugs, install an intravenous catheter;
- to stop bleeding from the postoperative wound in the superficial layers of the abdominal wall;
- to insert a catheter into the bladder in men and women;
- to draw up a medical history;
- to issue a sick leave;
- to issue a prescription;
- to provide correct recommendations for life in the postoperative period (diet, work activity);
- make a forecast;



- use educational and scientific literature, including the Internet in the classroom;
- to establish friendly relations with the medical staff, the patient and his relatives and friends.

Test tasks:

1. What 3 signs are the most important for diagnosing acute appendicitis?
  - A. Blood leukocytosis and a shift of the leukocyte formula to the left.
  - B. Pain while palpating in the right iliac region.
  - S. Pain during cervical traction during vaginal examination.
  - D. Symptom of a coughing fit.
  - E. Defense in the right iliac region.
2. Identify 4 auxiliary methods that can be used to confirm the diagnosis of acute appendicitis.
  - A. Clinical blood analysis.
  - B. Laparoscopy.
  - S. Fecal occult blood analysis.
  - D. Rectal and vaginal examination.
  - E. Ultrasound examination.
3. What 4 complications of acute appendicitis can be observed in the postoperative period:
  - A. Subdiaphragmatic, pelvic or interintestinal abscess.
  - B. Widespread or local peritonitis.
  - S. Pilephlebitis.
  - D. Abscess of the stump of the appendix.
  - E. Acute cholecystitis.
4. Specify 3 manipulations that should be performed before appendectomy for acute appendicitis.
  - A. Administer a pain reliever.
  - B. Wash the stomach.
  - C. Introduce antispasmodics.
  - D. Shave the belly.
  - E. Make an enema.
5. What are the 3 goals of a rectal examination in acute appendicitis?
  - A. Exclusion of pathology and colon overhang
  - B. Exclusion of bladder pathology.
  - C. Identification of signs of "low" location of the appendix.
  - D. Detection of Grekov's symptom.
6. Choose three studies necessary for the differential diagnosis of acute appendicitis and renal colic.
  - A. Overview X-ray of the organs of the abdominal cavity.
  - B. Ultrasound examination of organs of the abdominal cavity and urinary system.
  - S. Excretory urography.
  - D. General clinical analysis of blood and urine.
  - E. Chromocystoscopy.



7. Determine the surgeon's tactics during an operation for acute appendicitis in the absence of destructive changes in the appendix.

- A. It is necessary to drain the abdominal cavity.
- B. It is necessary to conduct a revision of the terminal department of the ileum.
- C. It is necessary to carry out an audit of women's uterus and appendages.
- D. Appendectomy is not performed in the absence of external changes in the appendix.
- E. It is necessary to exclude Crohn's disease.

8. During an operation for acute appendicitis, the surgeon found minor changes in the appendix and performed an appendectomy. During the subsequent revision, a rupture of the right fallopian tube (ectopic pregnancy) was discovered, in connection with which it was necessary to remove the right fallopian tube. What two tactical mistakes did the surgeon make?

- A. Unreasonably performed an appendectomy.
- B. Before performing the appendectomy operation, he did not perform a revision of the uterus with appendages.
- C. The operation had to be completed by draining the abdominal cavity.

9. 9 days after the surgery for perforated appendicitis, a 53-year-old patient developed a rise in body temperature in the evenings, fever, and pain in the right half of the chest. What three complications can be caused by this clinical picture?

- A. Right-sided pleuropneumonia.
- B. Abscess of the right lung.
- S. Subphrenic abscess.
- D. Phlegmon of the retroperitoneal space.

10. A 20-year-old patient was diagnosed with a pelvic abscess on the 7th day after appendectomy, which was detected during the rectal examination. There are no signs of peritonitis. What is the correct tactic?

- A. Active detoxification and anti-inflammatory therapy.
- B. Laparotomy, revision of the abdominal cavity and drainage of the abscess.
- C. Opening of the abscess through the rectum.
- D. Washing the rectum with solution of antibiotics

### **Conclusion.**

In the article the model of mastering the topic "Appendicitis" is offered, the main questions have been asked, the possible tasks have been introduced. This model can be used for teaching and studying different topics of clinical subjects.

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**Анотація.** Робота присвячена проблемі вдосконалення процесу навчання дисципліни «Хірургія» студентів ДНМУ – майбутніх лікарів - за допомогою системи спеціальних завдань, спрямованих на відпрацювання сформованих знань та вмінь, їх закріплення й контроль.

Об'єкт дослідження – процес професійної підготовки студентів у Донецькому національному медичному університеті (ДНМУ).

Модель - це допоміжний об'єкт, який знаходиться у певній відповідності до об'єкта, що вивчається (оригіналу), і є більш зручним для дослідження оригіналу. Відображаючи окремі особливості поведінки об'єкта-оригіналу, модель має деякі риси, ідентичні з оригіналом, і використовується для одержання такої інформації про оригінал, яку складно або неможливо одержати шляхом безпосереднього дослідження оригіналу. Модель являє собою особистісне уявлення про досліджуваний об'єкт, своєрідну форму кодування інформації про об'єкт.

Таким чином, можна сказати, що модель - це об'єкт будь-якої природи, який при дослідженні здатний заміщати реально існуючий об'єкт з метою отримання нової інформації про останній. Моделі є формою абстракції особливого роду, в якій суттєві відношення об'єкта закріплені у зв'язках, які наочно сприймаються й уявляються. У статті представлено модель підготовки студентів за темою «Апендицит».

**Ключові слова:** медична освіта, хірургія, пізнавальна діяльність, мета, навчальне завдання, оцінювання.