https://www.proconference.org/index.php/gec/article/view/gec33-00-009
DOI: 10.30890/2709-1783.2024-33-00-009

UDK 371

DEVELOPMENT OF CRITICAL THINKING DURING PRACTICAL LESSONS OF THE DISCIPLINE "ANALYTICAL CHEMISTRY"

Zaitseva G.M.
c.ch.s., as.prof.
ORCID 0000-0003-3138-6324
Reva T.D.
d.ped.s., prof
ORCID 0000-0002-3367-5931
Puskareva Ya.M.
c.ch.s., as.prof.
ORCID 0000-0001-9856-7846
Chkhalo O.M.
c.ped.s., as.prof.
ORCID 0000-0002-8874-4674
Gozhdzinsky S.M.
c.ch.s., as.prof.
ORCID 0000-0003-3592-1486
Bogomolets National Medical University, Shevchenka Bul., 13., 01601

Abstract. *A number of techniques that contribute to the development of students' critical thinking during practical classes of the discipline "Analytical Chemistry" have been proposed and introduced into the educational process. Special attention is focused on creative and situational tasks, through the solution of which the ability to make reasoned decisions is most clearly expressed.*

Key words: *critical thinking, analytical chemistry, creative and situational tasks.*

Introduction.

Analytical chemistry is important to future magisters of pharmacy for numerous reasons. Analytical chemistry allows to determine the qualitative and quantitative composition of various substances used in the production of medicinal products. This helps in ensuring high quality of raw materials and control of drugs.

The goal is to develop an innovative approach to students' acquisition of practical skills to analyze and solve situational problems of qualitative analysis based on information about the analytical characteristics of the passage of qualitative reactions.

Methods: pedagogical observation. pedagogical experiment, conversation.

Main text

The development of critical thinking is an important element of education and

personal development. Critical thinking is the ability to understand, analyze and evaluate information or a situation before making a decision or formulating conclusions.

The development of critical thinking during practical classes of the discipline "Analytical Chemistry" at the Department of Analytical, Physical and Colloidal Chemistry is an important component. Techniques that contribute to the development of critical thinking:

- assessment of the methodology of conducting experiments (understanding the essence of the methods used),

- assessment of the accuracy and reliability of the obtained results (analysis of possible sources of errors, application of statistical analysis),

- analysis of chemical equations and reactions (understanding the mechanism of reactions and chemical processes),

- perception of new concepts (active participation in discussions, questions and debates),

- formulation of hypotheses,

- interdisciplinary approach (connection of analytical chemistry with other sciences).

Also, effective development of critical thinking is achieved through creative and situational tasks:

- experimental design (planning and description of one's own experiment in analytical chemistry),

- determination of chemical composition (development of a strategy for determination of an unidentified sample of a substance),

- analysis of possible errors of the conducted research and possible ways to minimize it,

- creative solutions to various problems.

Conclusions.

Critical thinking is an important skill for pharmacists as they work in an industry where accuracy, safety and efficacy of treatment are of utmost importance. Practical classes of the discipline "Analytical Chemistry" lay the foundation for the development of skills to assess practical situations and make reasoned decisions.