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ОСВІТА І НАУКА: СТРАТЕГІЧНИЙ ПРІОРИТЕТ У XXI СТОЛІТТІ

Ali Emad Nehad
Lincoln University College, Malaysia
Supervisor: **I.V.Semenyshyna,**
PhD in Physical and Mathematical Sciences,
Associated Professor, Department of Mathematical Disciplines,
Computer Science and Modeling,
State Agrarian and Engineering University in Podilya,
Kamianets-Podilskyi
Supervisor: **Faten Al Nadzhar**, Adjunct Faculty,
Abu Dhabi University, United Arab Emirates

MATHEMATICAL COMPETENCE ACQUISITION OF A MODERN SPECIALIST

Modern science has accumulated knowledge for solving theoretical and practical tasks associated with the training of modern specialists' mathematical competence. The first most important aspect of mathematical literacy (according to definition OESD/PISA) is mathematical competence.

Mathematical competence is the ability to see and apply mathematics in real life, to understand the meaning and method of mathematical modelling, the ability to build mathematical model, to investigate it with the help of mathematical methods and to interpret the obtained results.

Mathematical competence is determined by levels of academic achievement, which are essential for gaining mathematical skills. Mathematical skills include:

- the ability of mathematical thinking;
- the ability of mathematical reasoning;
- the ability of mathematical modelling;

- ability to solve mathematical problems;

Mathematical competence is determined by levels of academic achievement with a focus on acquiring mathematical skills. Mathematical skills include:

- mathematical thinking skills;
- mathematical reasoning skills;
- mathematical modelling skills;
- ability to solve mathematical problems;
- ability to present data;
- ability to operate mathematical designs;
- mathematical communication skills;
- ability to use mathematical tools.

Most and sometimes even all of these skills are used in real mathematical activities. The following mathematical skills are divided into three classes of competences:

I – Reproduction, determination, calculation, ability to reproduce mathematical constructions, define mathematical objects, perform calculations;

II – Structuring and integration for solving tasks;

III – Mathematical thinking, generalization and insight.

The formation of mathematical competences should become the main purpose of mathematical education [1].

We must admit that attention should be focused on professional competence, readiness to create and study knowledge-intensive technologies, to carry out technology transfer, and, consequently, to develop mathematical skills, competence in solving the emerging tasks with the help of mathematics.

The basis of mathematical training of the modern specialist is fundamentality, integration, innovativeness, professional direction, creativity.

Therefore, the mathematical competence of the modern specialist is subject and industry-based competence, that in its turn forms the key competence of the specialists and has a certain structure. Mathematical competence acquisition takes place in the process of personal achievement of educational program learning outcomes.

References

1. Semenyshyna I. V. Profesiina kompetentnist pry vykladanni dystsyplin matematychnoho tsyklu u vyshchykh navchalnykh zakladakh. [Professional competence in teaching mathematical disciplines in High School]. Bulletin of Ukrainian scientific and methodical conference "*Modern scientific and methodical issues in High Scool*": Kyiv NUKh, 2013, P.126.
2. Bibik N.M. Kompetentnisna osvita – vid teorii do praktyky [Competence education – from theory to practice] / N.M. Bibik, I.H. Yermakov, O.V. Ovcharuk. Київ : Pleiada, 2005. 120 p.
3. Rakov S.A. Formuvannia matematychnykh kompetentnostei vypusknyka shkoly yak misiia matematychnoi osvity [mathematical competence formation with the school students]. *Mathematics in school*. 2005. №5. P.2-8.
4. Ponedilok V.F., Semenyshena I.V. Prykladna spriamovanist navchannia matematyky u formuvanni profesiinoi kompetentnosti maibutnikh fakhivtsiv ahrariiv. *Profession-based teaching mathematics of future experts in agronomyu. Pedagogical Sciences : Scientific Bulletin*. 2011. P. 124-128.
5. Громик А.П. Використання інформаційних технологій у навчанні математичних дисциплін майбутніх фахівців. *Аграрна наука та освіта Поділля:* збірник наукових праць міжнар. наук.-практ. конф. Ч.2. (14-16 березня 2017 р., м. Кам'янець- Подільський). Тернопіль : Крок, 2017. С. 336-338.
6. Громик А.П. Викладання дисциплін математичного циклу студентам непрофільних спеціальностей. *Сучасні проблеми землеробської механіки*: Зб. наук. пр. XVIII Між-народної наукової конференції, присвяченої 117 річниці від дня народження академіка П.М. Василенка. (16-18 жовтня 2017 р., м. Кам'янець- Подільський). Тернопіль : Крок, 2017. С. 60-62.