Studies on Project Based Learning Approach in Medical and Engineer Higher Education in Bulgaria

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MODERN EDUCATIONAL PROGRAMME

Basic objectives:

- The development of
  - skills for lifelong learning
  - readiness for lifelong learning

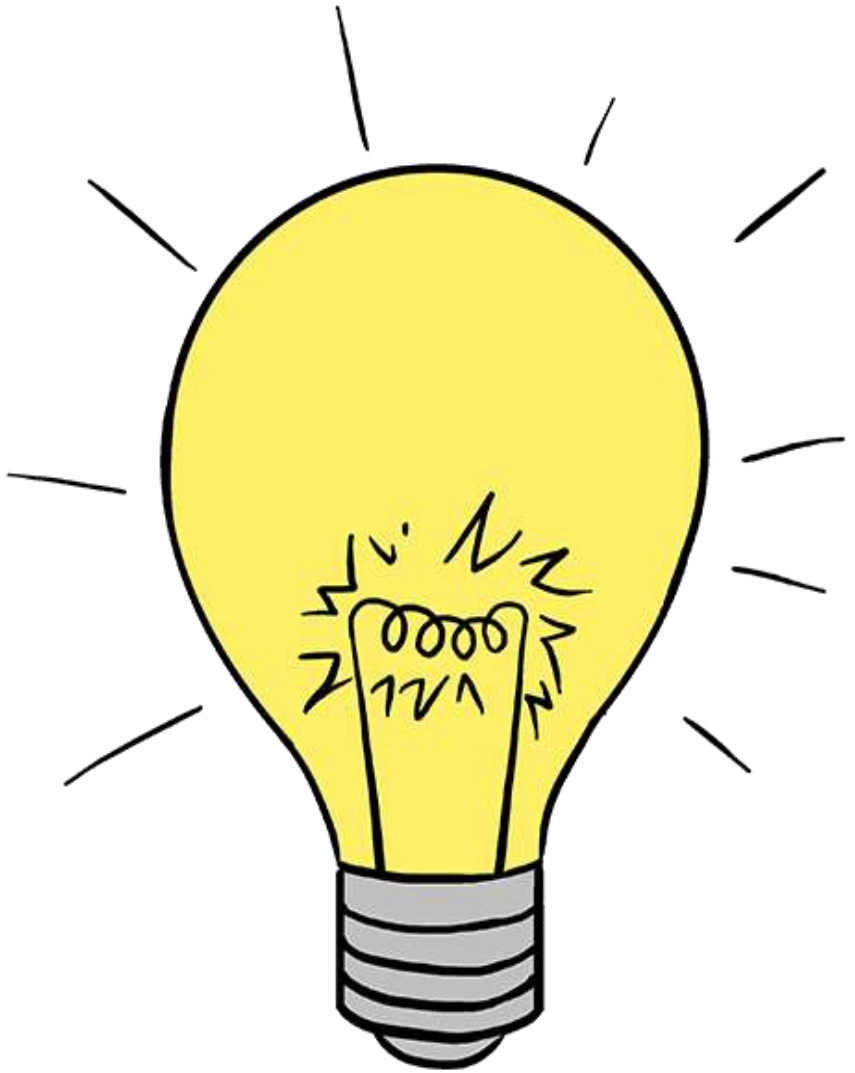
- self-regulated independent learning

MODERN EDUCATIONAL PROGRAMME

- Perform, revise, and develop their skills related to:
  - Communication
  - Information
  - Sharing
  - Management

INTRODUCTION

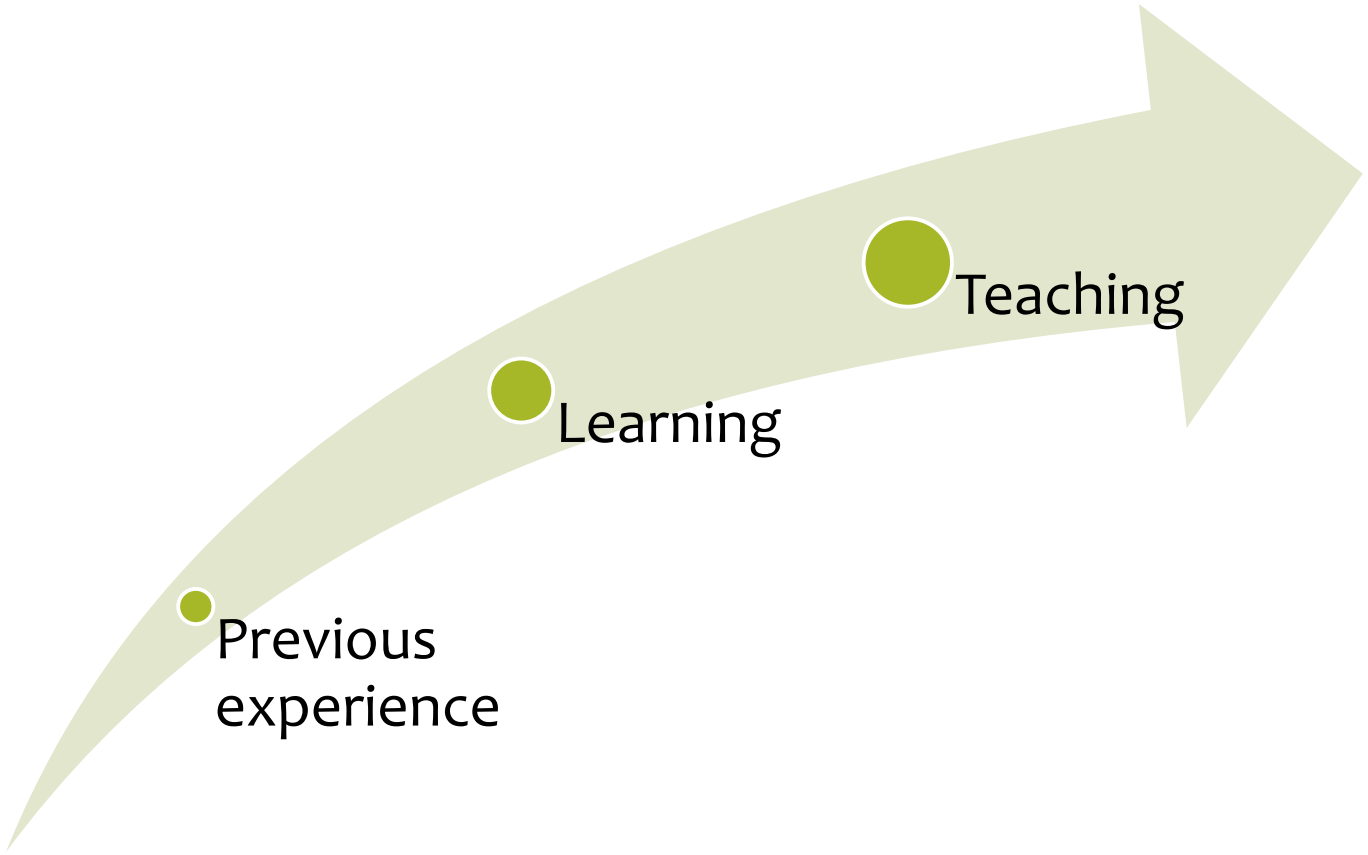
- In the first decade of the XXIst century:
- change in the planning of formal university education
  - curricula including general and specific qualification competences



Introduction - Methodological changes

- Competence
- Assessment
- Rethinking teaching methodologies

"Student-Centered Learning" (SCL)

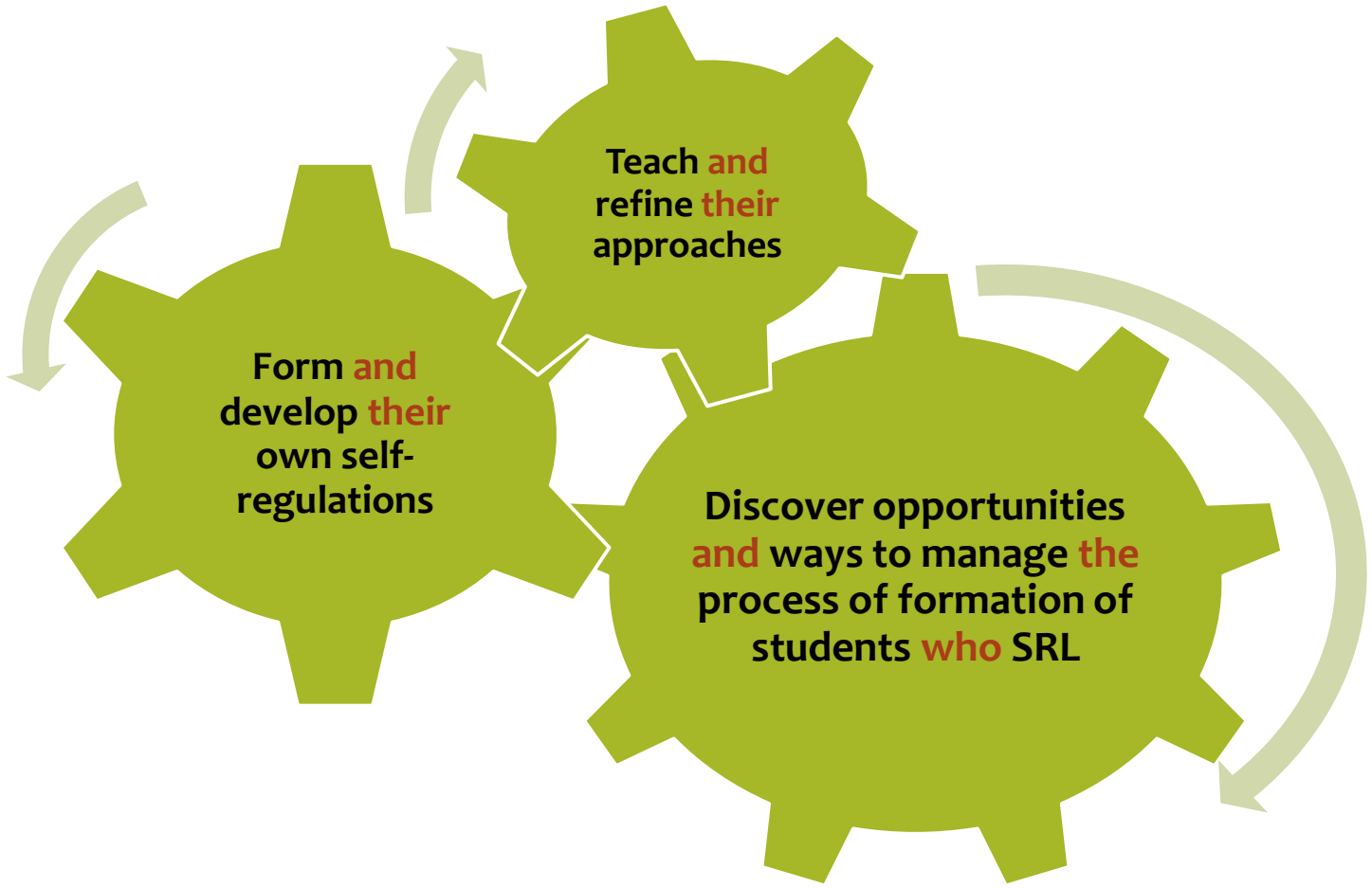


EFFECTIVENESS OF STUDENT-CENTERED PROGRAMS

THE ROLE OF THE TRAINER

1. • Encourage learners to carry out more and deeper research work and learn from each other
2. • Focus on the placement of authentic, real tasks
3. • Motivate learners to involve and participate.

TEACHERS


Teach and refine their approaches
Form and develop their own self-regulations
Discover opportunities and ways to manage the process of formation of students who SRL

MATERIALS, METHODS, AND STRUCTURE OF THE PROJECT

Stage 1
- Three weeks
- Individual work: theoretical research, visualization, presentation

Stage 2
- Two weeks
- Work in groups of two-three, focus on the professional aspect of the project

Stage 3
- One week
- Uniting all the small groups into a large one: preparation, presentation, discussion

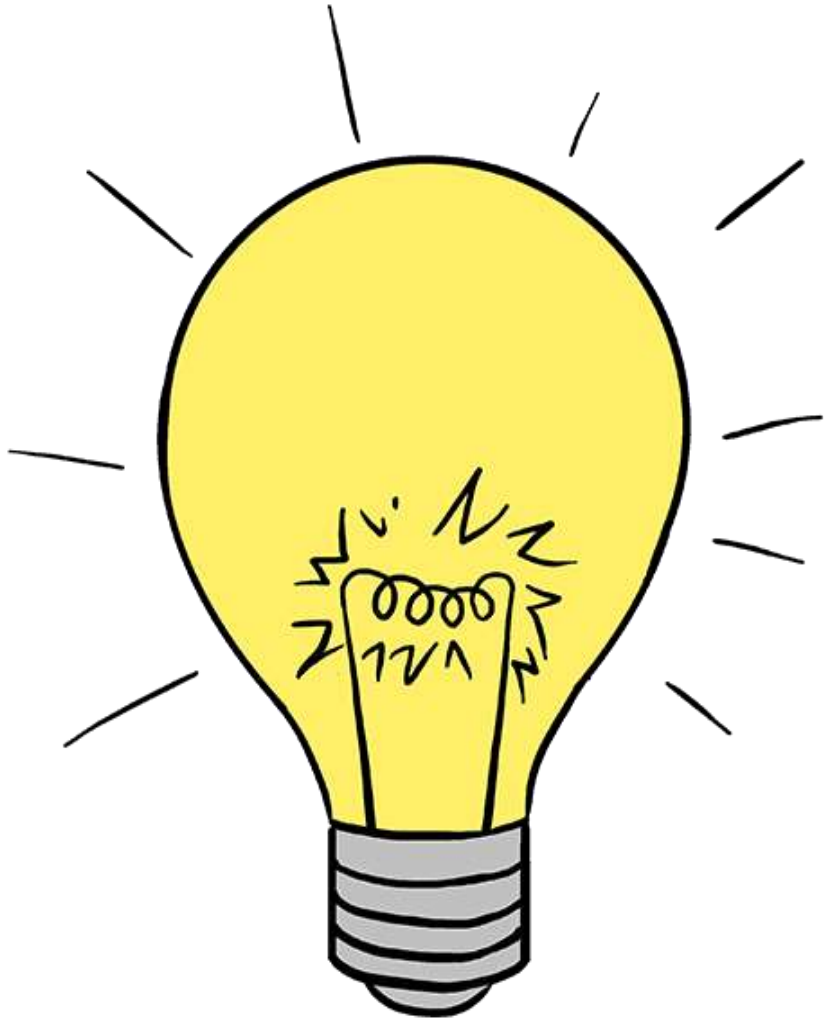
In the experimental part of the study is developed a model of STEM-project which demonstrates the possibilities for application of PBL in an academic environment in various professional spheres, united by common objects of research and knowledge.

MATERIALS AND METHODS

The topic of the project is **"Studying the causes, spread, and treatment of certain parasitic and transmissible diseases in humans"** for medical students, and **"Instrumental methods for separation and analysis of bioproducts"** for engineer–biotechnology students**.**

The study is conducted with **210 students** from the **Medical Faculty of Sofia University "St. Kliment Ohridski"** and the **University of Chemical Technology and Metallurgy (UCTM).**

The design of the training is built upon the content of the academic subjects **"Human Biology",** "Instrumental Analysis in Biotechnology" and **"Bioanalytical Techniques in Medicine"**.



ASSESSMENT OF THE PROJECT RESULTS

- Tests and a survey method consisting of 40 questions are used to evaluate PBL performance
- Subject of the analysis are questions corresponding to the satisfaction of the students from the project training and the achievement of the objectives of the project

PART A

- "Self-assessment for PBL"
- takes place after the end of STAGE 1

PART B

- "Self-assessment of PBL performance"
- Collects information in seven areas through group interactions

PART C

- Part C1 is a qualitative assessment of the work on the project and is focused on teamwork.
- Part C2 is foreseen at the end of STAGE 3

ASSESSMENT OF THE PROJECT RESULTS

QUANTITATIVE

Displaying the general tendencies about the impact of PBL on the development of learning skills.

QUALITATIVE

Based on comparing and contrasting the responses. Students react similarly to certain aspects of the development of skills in project-centered teamwork conditions.

«How do You Evaluate Your Work/Results on This Project? »

- Distribution of the students' answers to the question

42.38 %
- EXCELLENT

53.33 %
- GOOD

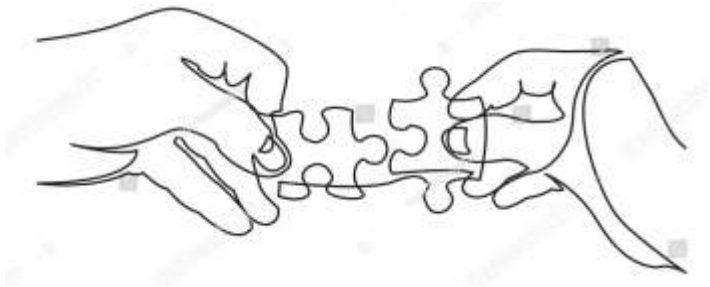
3.33 %
- MIDDLE

0.95 %
- LOW

RESULTS

MORE THAN 90% OF STUDENTS AGREE THAT:

- PBL is a student-centered training
- The implementation of the project activities helps to quickly and easily absorb the material
- They will be able to use what they have learnt in other academic subjects



RESULTS

Positive response

- over 80 % are confident in their progress

Hesitant or negative

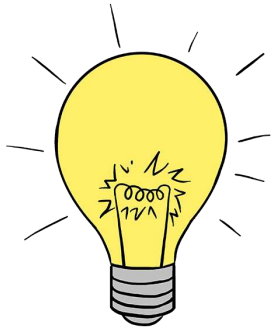
- 17 %
- 14 % of all students interviewed do not have the skills to self- monitor their own learning

18 % respond “I can not decide”

MORE RESULTS

95 %	98 %	99 %	100%
• define the project learning environment as contributing to the improvement of their communication skills	• indicate the work on the project is stimulating	• of the respondents define PBL as “useful”	• think PBL is “interesting”

CONCLUDING REMARKS



1. PBL encourages students to become more independent learners because it teaches "How to think" rather than "What to think".

2. PBL helps teachers educate highly motivated students who are stimulated to take responsibility for their own personal growth.

3. The project environment helps students to achieve the desired learning outcomes, as well as good results in the context of future academic training and professional realization.

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Thank You for Your Attention!