



Education and Culture

Socrates

Socrates - Comenius 2-1-2006-1

Improving Quality of Science Teacher Training in European Cooperation - constructivist approach (IQST)

Development Procedural Skills in Science Education – constructivist approach

(Description of the Units for Direct Teaching)

Plovdiv 2008

Seminar	Activities
Number	1
Topic	Scientific and technology literacy. Components and levels of scientific literacy
Goals	To get acquainted with the meaning of the concept “STL”; To define the levels of STL; To get acquainted with the Bulgarian Educational standards for physics content and to discuss the possibility of STL in it.
Time	2x45 minutes
Materials	Study material for the Module: Scientific and technology literacy, Unit 1
Strategy/ Method	Independent reading; Discussion – summary, main ideas; Group work - answer the questions.
Reflection/ Comments	Are suggested questions clear? Which changes do you suggest?
Developed Competencies Of Constructivist Science Teacher	Competency to design questions as a constructivist teacher;

Seminar	Activities
Number	2
Topic	Constructivist approach in Science education
Goals	To understand the concept of constructivism; To apply constructivist theory on physics teaching To find differences between traditional physics teaching and constructivist approach in physics teaching;
Time	2x45
Materials	Study material for the Module: Constructivist approach in Science education, Unit2
Strategy/ Method	Independent reading; Discussion – summary, main ideas;
Reflection/ Comments	Can I understand the differences between traditional and constructivists approach on physics education? Which strategies I can apply for instructions in constructivist classroom? Can I formulate questions for learners?
Developed Competencies Of Constructivist Science Teacher	Competency to design questions as a constructivist teacher; Competency to understand function of constructivist classroom and to find consistency between goals, action and assessment; Competency to use information from students to improve own teaching and facilitate professional growth Competency to reflect own teaching and identify ways and means through which he/she may grow professionally;

Seminar	Activities
Number	3
Topic	Building and developing scientific process skills
Goals	To be trained according to the contemporary concepts of building and developing process scientific skills; To know their importance, variety and be able to create and develop main PS in their students;
Time	1x45min
Materials	Study materials for the Module: Building and developing scientific process skills, Unit3
Strategy/ Method	Independent reading; Discussion-summary, main ideas; Group work – designing of the example of the building of SPS; Portfolio
Reflection/ Comments	Are the examples suitable? Which changes I should suggest?
Developed Competencies Of Constructivist Science Teacher	Competency of design the plan of building and developing SPS;

Seminar	Activities
Number	4
Topic	Strategies for supporting process skills development and assessment
Goals	<p>To get acquainted with appropriate strategies for process skills development and assessments;</p> <p>To describe different strategies for supporting process skills development and assessment;</p> <p>To develop ability to provide feedback to students and teachers;</p> <p>To choose suitable strategies for supporting process skills development and assessment.</p>
Time	2x45 minutes
Materials	Study materials for the Module: Strategies for supporting process skills development and assessment, Unit 4
Strategy/ Method	<p>Independent reading;</p> <p>Discussion – summary, main ideas;</p> <p>Group work –</p>
Reflection/ Comments	<p>Which strategies I can apply for supporting PS development?</p> <p>Which strategies I can apply for supporting PS assessment?</p>
Developed Competencies Of Constructivist Science Teacher

Seminar	Activities
Number	5
Topic	Plan, organize and deliver an active learning project
Goals	To get acquainted with the characteristics of active teaching; To get trained to plan, organize and present independently a work project; To become familiar with AL and will be able to use it in their future teaching.
Time	2x45 minutes
Materials	Study materials for the Module: Plan, organize and deliver an active learning project, Unit 5
Strategy/ Method	Independent reading; Discussion – summary, main ideas; Group work.
Reflection/ Comments	Did the group design the project that I like?
Developed Competencies Of Constructivist Science Teacher	Competence to use the results of the seminars in the constructivists physics teaching.