



Socrates

Socrates - Comenius 2-1-2006-1

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

Assessing Science for Understanding - a constructivist approach

(Description of the Units for Direct Teaching)

Description of the Unit 1 (direct teaching)

Seminar	Activities
Number	1
Topic	Purpose and Characteristic of Classroom Assessment
Goals	To understand purposes of classroom assessment; To define the concept of assessment; To characterize the classroom assessment.
Time	2x45 minutes
Materials	Study material for the Module: Assessing Science for Understanding Unit 1
Strategy/ Method	Independent reading; Discussion – summary, main ideas; Group work and Role Play– 1 teacher student plays a role of constructivist teacher and formulates questions for students in class; others in the group play a role students in class. Study Case-study on page 4 and answer the questions (work in pairs).
Reflection/ Comments	Could all students understand the questions of student-teacher? How the questions were evaluated (schoolmates and lectures)? Which changes do you suggest?
Developed Competencies Of Constructivist Science Teacher	Competency to design questions as a constructivist teacher; Competency to understand function of assessment in constructivist classroom and to find consistency between goals, action and assessment; Competency to use assessment as an important part of science education.

Description of the Unit 2 (direct teaching)

Seminar	Activities
Number	2
Topic	A Constructivist Approach in Assessment
Goals	To understand the concept of constructivism; To apply constructivist theory on assessment; To find differences between traditional assessment and constructivist approach to assessment; To explain mis-concepts in understanding of assessment.
Time	2x45 minutes
Materials	Study material for the Module: Assessing Science for Understanding Unit 2
Strategy/ Method	Independent reading; Group work: discussion – Case Study and Questions on page 11 Work in pairs: watch the video on website: http://165.224.221.98/pubs2006/timssvideo/index.asp (research PISA-assessment of student in five different countries) and make a decision which assessment is traditional or constructivist; Portfolio;
Reflection/ Comments	Can students understand the differences between traditional and constructivist assessment?
Developed Competencies Of Constructivist Science Teacher	Competency to assess students learning; Competency to understand function of assessment in constructivist classroom;

Description of the Unit 3 (direct teaching)

Seminar	Activities
Number	3
Topic	Planning an Implementing Assessment Projects
Goals	To develop skills to plan assessment; To plan a class assessment; To design questions for students; To evaluate assessment.
Time	1x45 minutes
Materials	Study material for the Module: Assessing Science for Understanding Unit 3
Strategy/ Method	Independent reading; Discussion – summary, main ideas; Group work – designing of the assessment project; Presentation of the project; Portfolio;
Reflection/ Comments	Are suggested questions clear? How the project was evaluated (schoolmates and lectures)? Which changes I should suggest?
Developed Competencies Of Constructivist Science Teacher	Competency to design questions as a constructivist teacher; Competency to plan constructivist assessment.

Description of the Unit 4 (direct teaching)

Seminar	Activities
Number	4
Topic	Techniques for Assessing Knowledge and Skills
Goals	To describe different technique; To understand purpose of the technique; To choose technique related teaching goals, content and abilities of students; To develop ability to provide feedback to student and teacher.
Time	2x45 minutes
Materials	Study material for the Module: Assessing Science for Understanding Unit 4
Strategy/ Method	Independent reading; Discussion – summary, main ideas; Group work (4 groups) each group applies 1 strategy (Background Knowledge Probe, Misconception/Preconception Check, Minute Paper, Concept Maps) in real situation using microteaching;
Reflection/ Comments	Which strategies I can apply for assessing in constructivist classroom? Was the group successful in microteaching and why?
Developed Competencies Of Constructivist Science Teacher	Competency to use multiple assessment tools and strategies to assess students' knowledge and skills.

Description of the Unit 5 (direct teaching)

Seminar	Activities
Number	5
Topic	Techniques for Assessing Learner Attitudes, Values and Self-awareness
Goals	To understand constructivist approach of assessing learner attitudes, values and self-awareness; To develop an openness to new ideas; To help prospective teachers better understand and promote the development of students' attitudes and values; To develop constructivist manner of teaching; To develop respect for others.
Time	1x45 minutes
Materials	Study material for the Module: Assessing Science for Understanding Unit 5
Strategy/ Method	Independent reading; Discussion – summary, main ideas; Group work: Design small project for assessing students' attitudes and values. Discuss your project in your working group. Portfolio;
Reflection/ Comments	Which strategies I can apply for Assessing Learner Attitudes, Values and self-awareness in constructivist classroom? Did the group design the project that I liked?
Developed Competencies Of Constructivist Science Teacher	Competency to use the results of multiple assessment to guide and modify instruction or assessment process in constructivist classroom; Competency to use the results of assessment as vehicles for students to analyze their own learning, engaging students in reflective self-assessment of their own work.

Description of the Unit 6 (direct teaching)

Seminar	Activities
Number	6
Topic	Assessing Learner Reactions to Instructions
Goals	To describe different technique; To understand purpose of the technique; To choose technique related teaching goals, content and abilities of students; To develop ability to provide feedback to student and teacher.
Time	2x45 minutes
Materials	Study material for the Module: Assessing Science for Understanding Unit 6
Strategy/ Method	Independent reading; Discussion – summary, main ideas; Group work (3 groups) each group applies 1 strategy (Electronic Mail, Feedback Group Instructional Feedback Technique, Group-Work Evaluations); Presentation of group work; Portfolio;
Reflection/ Comments	Which strategies I can apply for assessing learner reactions to instructions in constructivist classroom? Can I formulate questions for learners? Can I use the students' answer to improve my teaching?
Developed Competencies Of Constructivist Science Teacher	Competency to reflect own teaching and identify ways and means through which he/she may grow professionally; Competency to use information from students to improve own teaching and facilitate professional growth.