



CIDREE

Consortium of Institutions for Development
and Research in Education in Europe



**The National
Education
Institute
Slovenia**

Poljanska cesta 28
SI-1000 Ljubljana, Slovenia
T +386 1 300 51 00
F +386 1 300 51 99
www.zrss.si

REPORT ON CIDREE EXPERT MEETING, LJUBLJANA, SLOVENIA,

Teaching and learning strategies for scientific and mathematical literacy in STEM education

Zavod RS za šolstvo, Poljanska cesta 28, 1000 Ljubljana

Date: June 7 to June 9, 2017

Participants:

The expert meeting hosted 9 participants from 7 countries:

Jos Tolboom, SLO, The Netherlands; Gilles Aldon, ENS di Lyon, France; Ian Menzies, Education Scotland, Scotland; Sid Mysore Ministère de l'Éducation nationale, de l'Enfance et de la Jeunesse Luxembourg Luxembourg; Helena Karis, Skolverket, Sweden; Olof Andersson, Skolverket, Sweden; Ole Christian Norum, UDIR, Norway; Bård Vinje the Norwegian Centre for Mathematics Education Norway; Laszlo Csorba, OFI, Hungary

A short overview:

The expert meeting was aiming at providing continuation of the work of CIDREE community which had been implemented in the field of Science and Math education. We tried to upgrade and expand the addressed topics of previous meetings (curriculum development, the role of informatics in STEM education) by discussing effective strategies of teaching and learning in STEM for developing Science and Math literacy, promoting the agency within the Scientix community and by sharing the national strategies/visions of STEM education.

The topics covered were teaching and learning strategies in STEM, good practice with Scientix Activity Sheets – SES, benefits/opportunities for STEM teachers in Scientix community, scientific and mathematical literacy - elements and descriptors and efficient national strategies in STEM education.

The expert meeting **Teaching and learning strategies for scientific and mathematical literacy in STEM education** was an occasion to make an overview and to try out chosen strategies of teaching and learning in this field in line with contemporary EU guidelines. Within the active learning and hands on activities we presented the development and implementation of 7 Scientix Activity Sheets which were examined in various workshops. Those activity sheets have been developed at the national Education Institute of Slovenia in three fields: STEM experiments, STEM activities and STEM literacy development. We have investigated the possibilities, advantages, learning materials and information provided by the Scientix learning community. Strategies of teaching and learning have been linked to the activities which support the development of Science and Math literacy. We have also presented our strategy of developing

science and math literacy by defining the elements and their descriptors for different levels of education. We have provided critical peer reflection and exchange of practice of developing science and math literacy and strategies in the field of Stem education among participating countries.

An added value was a whole day school visit and class observation where participants had a chance of getting to know the Slovenian school system and talk to teachers about their role.

We can conclude that the expert meeting was very successful due to the interactive program (innovative and diverse types of activities with a high degree of participants' activity) and different types of activities (discussion, workshops, open space, group work, demonstrations, school visit, observation of IBL lesson in classroom etc.). The cooperation among the CIDREE countries' representatives has continued also after this expert meeting. In October 2017 the Scottish colleague Ian Menzies attended the biggest national science conference in Slovenia NAK where the main focus was inquiry based learning.

PROGRAMME

Wednesday, June 7, 2017

Time	Content
14:00 - 14:30	Welcome and introduction
14:30 - 15:00	Positioning of participating countries in STEM at triennial international survey PISA: strong and weak points of STEM skills and knowledge of 15-year-old students in each country
15:00 - 15:30	Break
15:30 - 17:00	Responses and measures upon PISA results in each country; preferential didactical approaches / strategies in STEM
17:00 - 17:30	Introduction to Inquiry based learning (IBL) – vertical approach
19:00 - 21:00	Dinner (Restaurant Gostilna na Gradu)

Thursday, June 8, 2017

Time	Content
9:00 - 9:30	Summary of Day 1
9:30 - 10:30	IBL as a key point of scientific and mathematical literacy
10:30 - 11:00	From IBL in STEM projects to Scientix: Advantages of participating in Scientix community
11:00 - 11:30	Break

11:30 - 13:00	Open space: Workshops with Scientix Activity Sheets
13:00 - 14:30	Lunch and walk around Ljubljana (Restaurant Gūžina)
14:30 - 15:30	Workshop in three different groups: Visualization (Science) / Modelling (Mathematics) / Computing (Informatics)
15:30 - 16:00	Break
16:00 - 17:30	Presentations of national STEM strategies of participating countries and common findings
19:00 - 21:00	Dinner http://www.spajza-restaurant.si/

Friday, June 9, 2017

Time	Content
9:00 - 10:30	IBL in action - school visit (Primary school Valentin Vodnik Ljubljana)
10:30 - 11:00	Break
11:00 - 13:00	“Surface analysis” of the existing situations in the field of STEM teaching and learning strategies trough developing scientific and mathematical literacy Summary of CIDREE expert meeting and closing
13:00 - 13:30	Farewell and lunch at school