

Métodos inovadores de aprendizagem para promover as capacidades científicas dos alunos

Focus Group - Innovative teaching and learning methods to promote students' scientific basic skills

Bragança, Portugal

2017 September 20

Minutes

Participants

Name	Institution
Ana Isabel Pereira	Polytechnic Institute of Bragança
Olga Ferreira	Polytechnic Institute of Bragança
Isabel Chumbo	Polytechnic Institute of Bragança
Maria José Alves	Polytechnic Institute of Bragança
Vitor Barrigão	Polytechnic Institute of Bragança
Teresa Calvo Pinto	Agrupamento de Escolas Emídio Garcia
Maria Natália Carvalho	Agrupamento de Escolas de Mirandela
Maria Pacheco	Polytechnic Institute of Bragança
Florbela Pires Fernandes	Polytechnic Institute of Bragança
Fernando António Galvão	Agrupamento de Escolas de Mirandela
Ana Maria Brito	Agrupamento de Escolas de Mirandela
Maria do Céu Pais	Agrupamento de Escolas de Mirandela
Cristina Falcão	Agrupamento de Escolas Miguel Torga
Cristina Andrade	Agrupamento de Escolas Miguel Torga
Célia Costa	Agrupamento de Escolas Emídio Garcia
Elisabete Margarido	Agrupamento de Escolas Emídio Garcia
Margarida Oliveira	Agrupamento de Escolas Emídio Garcia
Castelia Cristea	Babeş-Bolyai University - Romania
Cristea Vasile Mircea	Babeş-Bolyai University - Romania
Maria João Afonso	Polytechnic Institute of Bragança
Filomena Barreiro	Polytechnic Institute of Bragança
Maria Antónia Martins	Agrupamento de Escolas Emídio Garcia
Alexandra Prada	Agrupamento de Escolas de Mirandela
Ana Sofia Pinto Alves	Agrupamento de Escolas de Mirandela
Bruno Jorge Pereira	Agrupamento de Escolas de Mirandela
Celeste do Carmo Pereira	Agrupamento de Escolas de Mirandela
Maria do Carmo Pereira	Agrupamento de Escolas de Gouveia
Maria Helena Dinis	Agrupamento de Escolas Emídio Garcia
Maria João Ramos	Agrupamento de Escolas Emídio Garcia
Luísa Maria Fernandes	Agrupamento de Escolas Emídio Garcia



Minutes

A total of 30 participants were present at the focus group. Nineteen teachers have participated, coming from different areas, namely Biology (8), Chemistry and Physics (7), Math (7), English (4), Technology (2), Geography (1) and Geology (1). From these teachers, 13 already were part of the project's network.

The IPB researchers develop their work in the areas of Math (3), Chemistry (3), Informatics (1) and Education (2). Two visiting chemical engineering professors from the Babeş-Bolyai University, in Romania, also attended the meeting.

The focus group started with four presentations on Innovative Teaching and Learning Methods:

1. "INTACT- a platform for innovative classes", authored by Isabel Chumbo, Elisabete Silva and Vítor Gonçalves.

In this presentation, the main results of the INTACT project ("INteractive Teaching Materials Across Culture and Technology", Comenius project, Lifelong Learning Program, European Commission, 2012-2015) have been presented. The researcher Isabel Chumbo described the creation of interactive teaching and learning resources and the implementation of an online platform (www.intactschools.eu) allowing access to pre-developed materials, the development of educational activities and interactive collaboration across borders. A detailed explanation on the use of the platform was given: how to create a learning unit, a lesson and different learning objects; description of the available tools (lessons, videos, repository, forum and video conference).

2. "AduLeT - a contribution to create good practice in the use of educational technology", authored by Vitor Gonçalves, Isabel Chumbo, Elisabete Silva and Raquel Patrício.

In this presentation, a summary of the AduLeT project ("Advanced Use of Learning Technologies in Higher Education", Erasmus+ programme of the European Union, 2016-2018) was given by the researcher Vítor Gonçalves. This project, under progress, aims to create and stimulate a Community of Practice where higher education teachers can identify and share good educational practices about the teaching/learning method(s) and corresponding educational technologies used. The project's aims, consortium, collection of teaching methods and tools have been described.

3. "Learning using games", authored by Rui Pedro Lopes.

The researcher Rui Pedro Lopes described his pedagogical experience in higher education, dealing with the application of games in the classroom context. Several topics were discussed such as the introduction of new technologies, the creation of massive online open courses, the application of active pedagogical models, the use of games as strategies, gamification, educational games, and the balance between playful versus educational dimensions in a game. Several examples of educational games were given.

4. "E-Learning from Nature", authored by Ana Isabel Pereira, Olga Ferreira and Filomena Barreiro.

The researcher Ana Isabel Pereira presented the main activities and results of the E-learning from Nature project, comprising the contribution of all partners. A preview of the project's portal was shown, highlighting the multimedia resources available and the guide for science teachers on the subject of innovative methods to enhance students' motivation towards the study of scientific subjects and improve their basic skills in science. A review of the final Portuguese partner contribution was also given, considering the topics and scientific areas addressed in the 26 videos: Biology (13), Geology (5), Math (5), Physics (1), Chemistry (1)



and Geography (1).

All the power point presentations are available at <https://cloud.ipb.pt/d/5120d2f3765a49c8a287/>.

The first presentation presented an already implemented digital platform in which different teaching and learning methods could be implemented, including some *E-learning from Nature* resources and activities. The second presentation was related to a starting project, but the aim of creating a community of educational good practices was appreciated. Finally, the use of games was discussed and, according to the teachers, some difficulties concerning students' concentration were foreseen, if the games were applied in the classroom.

Finally, the results obtained in the E-learning from Nature project were discussed. The teachers from the network, participating in the workshop, were very motivated from the start to participate.

The major challenge was how to integrate the project activities in the normal school activities. First, study visits were organized. The video learning guides were produced by teams composed of researchers from IPB and /or secondary school teachers from different scientific areas, working closely with their students. This collaboration between students and teachers from secondary school and IPB was considered very fruitful.

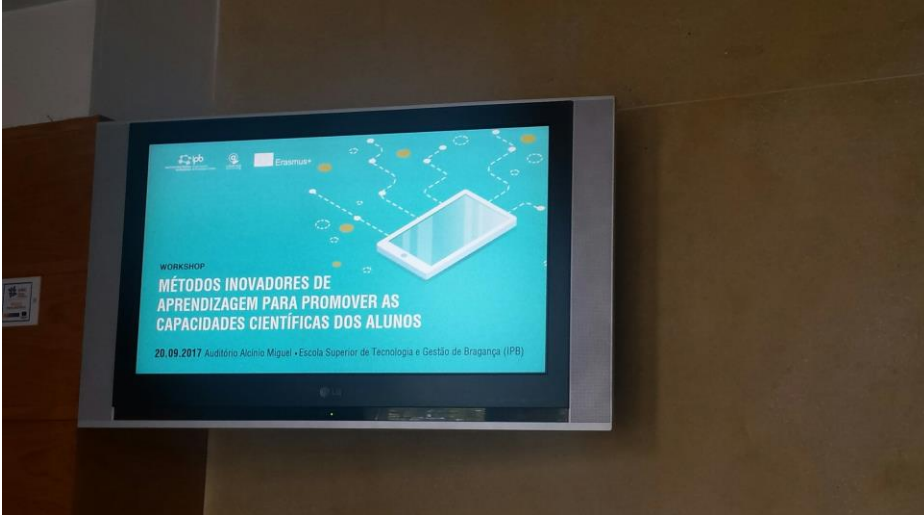
The major role of the students was to gather multimedia and text material before (at home or in the classroom) and during the study visit, working in a collaborative way, divided in several groups. The teachers were very pleased with the final result as they have received very positive feedback from their students.

Teachers considered that many videos could be easily integrated in the classroom context in the future, as they illustrate important concepts studied in the curricula. In some cases, videos could replace study visits to the surrounding natural areas, as they are not always feasible. This is of course much more relevant when using the videos of the other partners of the project. Other videos constitute lesson guides that could be adapted to other locations.

The main difficulties found concerned the lack of suitable equipment for high quality filming in outdoors with good sound quality. Some training needs were also felt in the software area (e.g. video editing, subtitling, adding animations and drawings). In our case, these drawbacks were overcome with the support of a small professional media company. As an alternative, a suggestion was made to include also secondary school students and teachers from the multimedia area for technical support.



Some Pictures





More pictures are available at <https://cloud.ipb.pt/d/a1dca48156c74684a4cc/>



Co-funded by the
Erasmus+ Programme
of the European Union

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WORKSHOP

MÉTODOS INOVADORES DE APRENDIZAGEM PARA PROMOVER AS CAPACIDADES CIENTÍFICAS DOS ALUNOS

20.09.2017 Auditório Alcínio Miguel • Escola Superior de Tecnologia e Gestão de Bragança (IPB)

15H30 PALESTRAS

- INTACT- UMA PLATAFORMA PARA AULAS INOVADORAS
Isabel Chumbo, Elisabete Silva e Vítor Gonçalves
- ADULET - UM CONTRIBUTO PARA CRIAR BOAS PRÁTICAS NA UTILIZAÇÃO DE TECNOLOGIA EDUCATIVA
Vítor Gonçalves, Isabel Chumbo, Elisabete Silva e Raquel Patrício
- APRENDIZAGEM BASEADA EM JOGOS
Rui Pedro Lopes
- E-LEARNING FROM NATURE
Ana I. Pereira, Olga Ferreira e Filomena Barreiro
- DISCUSSÃO SOBRE OS RESULTADOS DO PROJETO E-LEARNING FROM NATURE

17H00 PAUSA PARA CAFÉ

17H30 **DISCUSSÃO DE IDEIAS** COM O PARCEIRO DO PROJETO LIMERICK INSTITUTE OF TECHNOLOGY

