

SCIENCE IN THE MUSEUM: AN EDUCATIONAL PROJECT FOR THE BILINGUAL (ENGLISH-SPANISH) SCHOOLS.

Marta García-Sampedro, Mónica Herrero, David Álvarez & Antonio Torralba

Universidad de Oviedo (SPAIN)
garciafmarta@uniovi.es

Resumo

This out-of the classroom experience has been carried out in two bilingual schools in Asturias, Spain, with the aim of using museums and other non-formal spaces as contexts for the teaching of Science. The project has been implemented in two primary schools and around 400 hundred pupils have taken part on it since 2014. The project was lead and designed from the Education Sciences Department at University of Oviedo and several primary teachers from the mentioned schools were involved. The idea of the project was proposed to these primary teachers and the activities were put into practice by both, university teachers and primary teachers. The main theme of the project is the use of art master pieces (paintings and sculptures) and cultural heritage spaces to promote oral communication in English as a second language by integrating contents from the area of Natural Science principally. Bearing in mind that the project pretends to promote experiential learning and outdoor learning, the educational contexts are mainly focused on museum spaces and streets, although natural spaces around the museums such as gardens and parks have been used with the same purpose. The idea of using outdoor non-formal spaces to improve oral communication in English and contents from different areas come from previous experiences carried out in the Teacher Training and Education Faculty at University of Oviedo.

In the case of "Science in the Museum", the main objective of the project, is to learn contents in English from the Natural Science area, as we have already said, using heritage elements as a resource or as a context. Besides, the project pretends to improve students' and teachers' motivation, to develop a taste for art and heritage, and to know the local area surroundings. It could be said that the outdoor learning tradition of taking students out of the school to the natural environment has been exported to the context of museums and local heritage spaces.

The research of the project has been assessed through two different tools: an on-line questionnaire for the pupils and two discussion groups (one for the school teachers involved and a second one for university experts). The on-line students' questionnaires were filled in at the schools computer classrooms. The two discussion groups were developed at the faculty and they were conducted, in both cases, by the author of this communication. The objective of the first group was to know primary teachers' perceptions about the experience and their opinions about four categories of analysis: students' and teachers' motivation; the contexts; the activities; and oral communication in the English language. The second discussion group was made up of university experts belonging to different areas of education with the objective of evaluate and validate the proposal. The results obtained in the experience have been considered very positive by the teachers and experts involved in it. For this reason "Science in the museum" has been recognised as an innovative educational experience for primary and secondary school levels.

Palavras-chave: science teaching; primary and secondary education; outdoor learning; experiential learning.

XVIII EN C III ISS

educação em ciências: CRUZAR CAMINHOS, UNIR SABERES

LIVRO
DE
RESUMOS

XVIII ENEC III ISSE

2019

educação em ciências:
cruzar caminhos, unir saberes

Clara Vasconcelos, Rosa Antónia Ferreira, Cristina Calheiros,
Alexandra Cardoso, Belmira Mota & Tiago Ribeiro

Editores

Livro de Resumos: XVIII ENEC | III ISSE

Educação em Ciências: cruzar caminhos, unir saberes

Editores

Clara Vasconcelos – Faculdade de Ciências da Universidade do Porto, Unidade de Ensino das Ciências & Instituto de Ciências da Terra, Polo do Porto, Porto, Portugal

Rosa Antónia Ferreira – Faculdade de Ciências da Universidade do Porto, Unidade de Ensino das Ciências & Centro de Matemática da Universidade do Porto, Porto, Portugal

Cristina Calheiros – Centro Interdisciplinar de Investigação Marinha e Ambiental (CIIMAR), Porto, Portugal

Alexandra Cardoso – Faculdade de Ciências da Universidade do Porto, Unidade de Ensino das Ciências & Instituto de Ciências da Terra, Polo do Porto, Porto, Portugal

Belmira Mota – Faculdade de Ciências da Universidade do Porto, Unidade de Ensino das Ciências, Porto, Portugal

Tiago Ribeiro – Faculdade de Ciências da Universidade do Porto, Unidade de Ensino das Ciências & Instituto de Ciências da Terra, Polo do Porto, Porto, Portugal

DOI: 10.24840/978-989-746-198-9

ISBN: 978-989-746-198-9 (eBook)

Data: 5, 6 e 7 de setembro de 2019

Local; Faculdade de Ciências da Universidade do Porto

Página web: <https://enec2019.fc.up.pt/>

Índice Geral

Índice Geral	4
Comissões	6
Comissão Organizadora	6
Comissão Científica	6
Comissão Científica Honorária	8
Apresentação	10
Eixos Temáticos.....	13
Sessões Plenárias	14
01. A Educação na Promoção do Bem-estar de Doentes Oncológicos Pediátricos.....	15
02. O Ensino Contextualizado nas Ciências e na Matemática	16
03. Divulgação em Ciência	18
04. Compreender o cérebro para ensinar melhor. Ensinar para melhor compreender o cérebro	18
05. Aprendizagem Mediada Virtualmente.....	20
Sessões Paralelas - Comunicações Orais e em Póster	21
01. Educação em Ciências: ética e valores Educación en Ciencias: ética y valores Science Education: ethic and values	22
02. Educação em Ciências no primeiro e no segundo ciclos do Ensino Básico Educación en Ciencias en primaria Science Education in Elementary and Middle School	36
03. Educação em Ciências no terceiro ciclo do Ensino Básico Educación en Ciencias en secundaria obligatoria Science Education in Junior High School	75
04. Educação em Ciências no Ensino Secundário Educación en Ciencias en Bachillerato Science Education in Secondary	102
05. Educação em Ciências no Ensino Superior Educación en Ciencias en la Enseñanza Superior Science Education in Colleges and Universities	151
06. Desenvolvimento profissional em Educação em Ciências Desarrollo profesional en Educación en Ciencias Professional Development in Science Education	201
07. Currículo e políticas educativas em Educação em Ciências Currículum y políticas educativas en Educación en Ciencias Curriculum and Educational Policies in Science Education	234
08. Inovação em Educação em Ciências Innovación en Educación en Ciencias Innovation in Science Education	250

09. Divulgação em Ciências Divulgación en Ciencias Science Communication and Outreach	333
10. Neurodidática Neurodidáctica Neurodidactics	376
11. História das Ciências no Ensino das Ciências Historia de las Ciencias en la Enseñanza de las Ciencias History of Science in Science Teaching	385
Workshops	397
01. As discussões matemáticas coletivas como forma de tornar visível o pensamento dos alunos.....	398
02. Educação Ambiental	398
03. Educação, Ciência e Religião: o cosmos, as moléculas e a vida	398
04. Hereditariedade, Sexo e Género - do outro lado do espelho.....	399
05. História da Matemática no Ensino da Matemática.....	399
06. Multimédia no Ensino da Química	399
07. Practical 'Earth Learning	399
08. Os microrganismos no nosso quotidiano	400
09. Os desafios de comunicar ciência nos dias de hoje	400
10. O vídeo como ferramenta de ensino e de aprendizagem ativa em Física.....	400
Local do Evento	401