PATHWAY

D4.1 Specifications for the Organisation of Workshops

Project Title	The PATHWAY to Inquiry Based Science Teaching
Project Number:	266624
Sub-programme or KA	CSA-SA Support Actions
Document Type:	Document
Distribution:	Public
Status:	Final
Version:	
Date:	31-05-2011
Number of pages:	
Authors:	Christos Ragiadakos

PATHWAY PARTNER IN CHARGE:	PEDAGOGICAL INSTITUTE (GREECE)
NUMBER OF WORKSHOPS IMPLEMENTED:	2

Details:

WORKSHOP NUMBER	PLACE	DATE (S)	TARGET GROUPS INVOLVED
1	ATHENS	14-4-2011	☐ IN-SERVICE TEACHERS ☐ PRE-SERVICE TEACHER ☐ CURRICULUM DEVELOPERS ☐ POLICY MAKERS / ADMINISTRATORS X OTHER (PLEASE SPECIFY: SECONDARY EDUCATION SCIENCE SCHOOL COUNSELLORS OF ATHENS)
2	ATHENS	5-5-2011	☐ IN-SERVICE TEACHERS ☐ PRE-SERVICE TEACHER ☐ CURRICULUM DEVELOPERS ☐ POLICY MAKERS / ADMINISTRATORS X OTHER (PLEASE SPECIFY: PRIMARY EDUCATION SCHOOL COUNSELLORS OF ATHENS)

VISIONARY WORKSHOP FOR SECONDARY EDUCATION SCIENCE STAKEHOLDERS OF ATHENS DISTRICT (Athens, 14-4-2011)

Introduction

Pedagogical Institute has the authority to invite teachers and stakeholders for training and general information. In this context we invited the Science Counsellors and the Responsible of Science School Centres of the district of Athens. The invitation (in Greek):

ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ
ΥΠΟΥΡΓΕΙΟ ΠΑΙΔΕΙΑΣ, ΔΙΑ ΒΙΟΥ ΜΑΘΗΣΗΣ ΚΑΙ ΘΡΗΣΚΕΥΜΑΤΩΝ

ΠΑΙΔΑΓΩΓΙΚΟ ΙΝΣΤΙΤΟΥΤΟ

"The Pathway to Inquiry-Based Science Teaching"
SIS-CT-2010-266624

ΠΡΟΓΡΑΜΜΑ ΗΜΕΡΙΔΑΣ
«ΑΝΑΖΗΤΗΣΗ ΚΑΤΑΛΛΗΛΗΣ ΔΙΑΔΙΚΑΣΙΑΣ ΠΡΟΩΘΗΣΗΣ ΤΗΣ ΔΙΕΡΕΥΝΗΤΙΚΗΣ ΔΙΔΑΣΚΑΛΙΑΣ ΣΤΗ ΔΕΥΤΕΡΟΒΑΘΜΙΑ ΕΚΠΑΙΔΕΥΣΗ»

Ημερ: 14-4-2011
Θέση: ΠΙ, Αιθ. Παπανούτσου, Μεσογείων & Αιγαίου Πελάγους 1-3

Αγαπητοί συνάδελφοι

Σας ευχαριστώ που ανταποκριθήκατε στην πρόσκληση να συζητήσουμε τρόπους προώθησης της Διερευνητικής Διδασκαλίας στη Δευτεροβάθμια Εκπαίδευση που θα γίνει υπό μορφή Ημερίδας στο πλαίσιο του ευρωπαϊκού έργου "The Pathway to Inquiry Based Science Teaching" (SIS-CT-2010-266624). Ο γενικός σκοπός του έργου είναι η διαμόρφωση και προώθηση ενός πλαισίου διδασκαλίας των Φυσικών Επιστημών με τη διδακτική μεθοδολογία της Διερευνητικής Διδασκαλίας (Inquiry-based science teaching), που προτείνεται από την Ευρωπαϊκή Επιτροπή (Rocard report, 2007, "Science Education Now: A Renewed Pedagogy for the Future of Europe"). Το έργο θα προωθήσει τη διερευνητική διδασκαλία μέσω μιας γενικής επιμόρφωσης των καθηγητών των φυσικών επιστημών με βασική πηγή υλικού τα ανοικτά αποθετήρια δραστηριοτήτων, όπως πχ του CERN, COSMOS, HYPATIA, MUST κλπ. Επίσης θα διακρίνουμε, θα διαμορφώσουμε και θα προωθήσουμε (μέσω ημερίδων, συνεδρίων κλπ) τις «ΚΑΛΕΣ ΠΡΑΚΤΙΚΕΣ» διδασκαλίας των φυσικών επιστημών με τη Διερευνητική Μέθοδο. Η σελίδα του έργου στο ΠΙ είναι http://www.pi-schools.gr/programs/pathway/

Ημερίδα για Διερευνητική Διδασκαλία		
Διάρκεια	Ομιλητής	Θέμα
9-10 π.μ.	Χ. Ραγιαδάκος	Το έργο "PATHWAY", η έκθεση Rocard και τα επιστημονικά αποθετήρια
10-11π.μ.	Γ. Παλησός	"ΣΧΕΣΗ ΤΑΣΗΣ ΚΑΙ ΕΝΤΑΣΗΣ, Ένα παράδειγμα εφαρμογής του μοντέλου καθοδηγούμενης ερευνητικής μάθησης"
11-12 μ.	Γ. Παλησός	Συζήτηση για Διερευνητική Διδασκαλία
12-1 μ.μ.	Κ. Καφετζόπουλος	Η Διερευνητική Διδασκαλία στη Χημεία
1-2 μ.μ.	Χ. Ραγιαδάκος	Συζήτηση για απαραίτητο περιβάλλον εφαρμογής των μεθόδων της Διερευνητικής Διδασκαλίας

Πληροφορίες: Χρήστος Ραγιαδάκος, crag@pi-schools.gr

1. Number of participants per profile

18 Science School Counsellors and Responsible of Science Laboratory Centers from the district of Athens

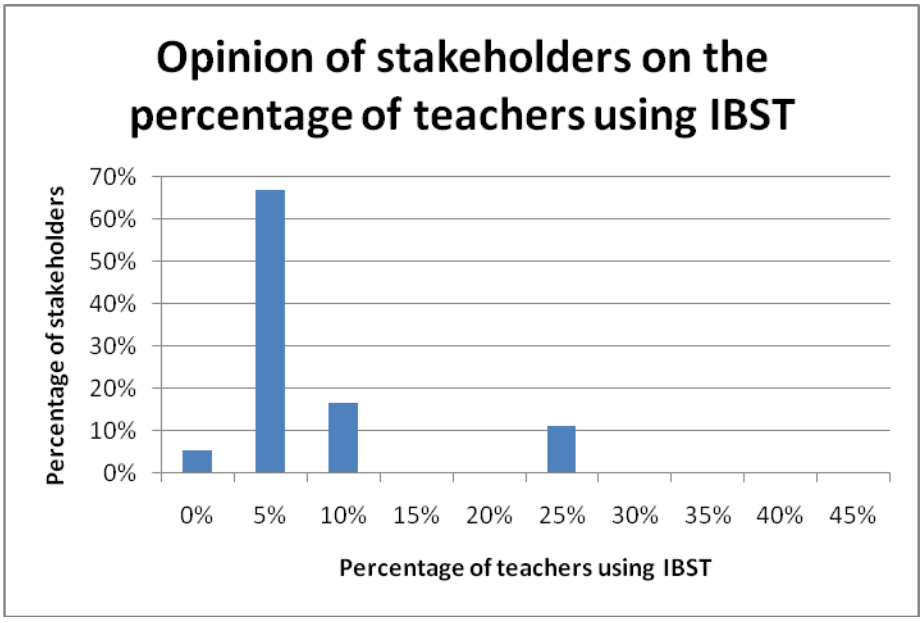
2. Involvement of the audience in IBSE

- Participation in IBSE activities
- Level of collaboration in innovative IBSE in which they are involved
- Familiarisation with IBSE methodologies, and characteristics of IBSE for the audience

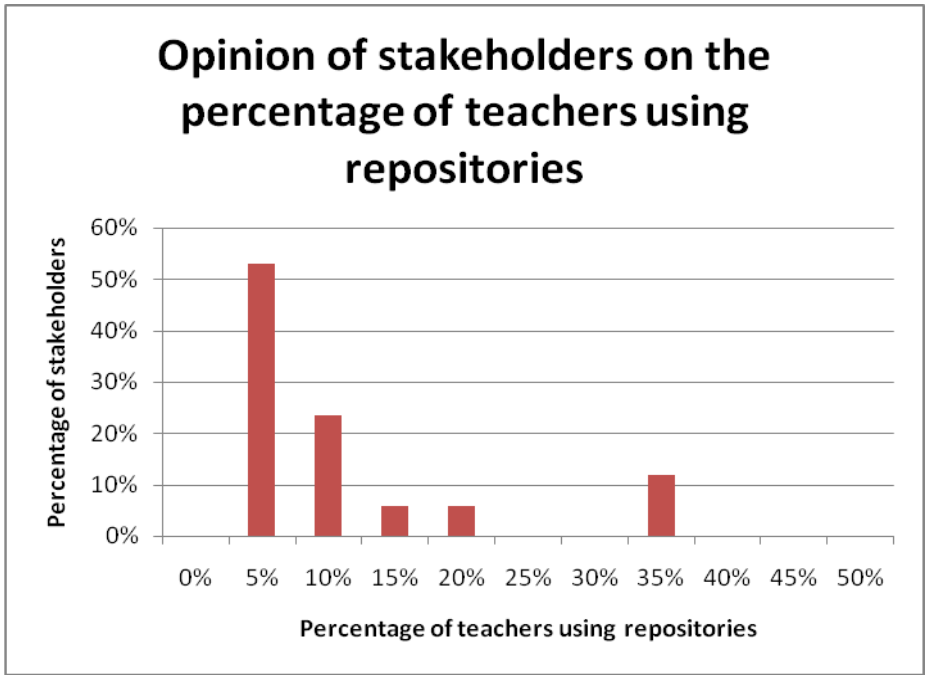
The Science School Counsellors are administratively obliged to promote the discovery method in the schools of their district. Their objective is to persuade/train the teachers to use hands on methods and experiments in their courses. This may be done either through visiting the schools or by training the teachers in the Science Laboratory Centers. The Responsibles of these centers help the School Counselors

3. Analysis of the posed questions

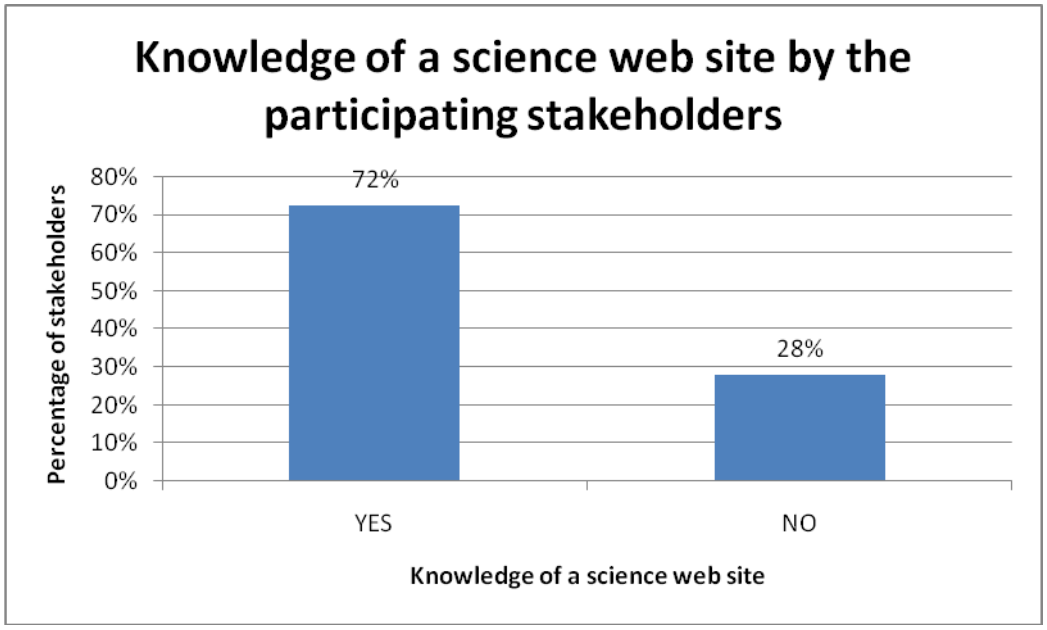
Question 1: *According to your estimation what is the percentage of secondary education teachers who use the IBSE method?*



Question 2: *According to your estimation what is the percentage of secondary education teachers who use repositories to enrich their scenarios?*



Question 3: *Do you know a web site, repository or blog on science teaching?*



Question 4: *What factors impede IBST in secondary education?*

FACTORS IMPEDING IBST	REFERENCES
Need of teaching and preparation time	13
Non existence of substructure (Laboratories, etc)	13
Teachers do not know IBST	6
The university entrance exams in the upper secondary education	6
The chalk & blackboard method is easy without additional effort	5
The university entrance exams in the upper secondary education	5
Teachers' indifference	4
There is no teacher motivation	3
The existence of a unique book	3
Large number of students in the classroom	2
Too much content in the curriculum	2

Question 5: *What factors favour IBST in secondary education?*

FACTORS FAVOURING IBST	REFERENCES
Appropriate teachers' training	14
Existence of laboratories	8
Teachers' communication	5
Two continuous hours in the science teaching school timetable	3
Good knowledge of ICT	3
Teachers' evaluation	2

4. Conclusions

During the workshop a general discussion on the implementation of the Inquiry-Based Science Teaching took place. According to the recorded opinions we created the following Strengths-Weaknesses-Opportunities-Threats (SWOT) table.

OBJECTIVE: IBSE Implementation in Secondary Education		
	INTERNAL	**EXTERNAL**
POSITIVE	**Strengths**	**Opportunities**
	• The National Curriculum is based on Inquiry-Based methodology • The state controlled School Counselors can be mobilized to promote IB science teaching • The laboratory school science centers can be mobilized to promote IB science teaching • Support by the Association of Students' Parents • The school network in the internet	• Use of the European Programs • The current existence of a general reform wind in the administration • The rapid expansion of the repositories of science educational resources • The enactment of the projects in upper secondary education
NEGATIVE	**Weaknesses**	**Threats**
	• The non-existence of subject classrooms • The non-existence of initial university training for teachers • The teachers do not stay in school all the school-time • The non-existence of objective teachers' evaluation diminish their teaching effort and willingness • The school directors have no administrative powers • The School Counselors cannot enter classrooms • The school directors cannot enter classrooms	• Teachers strikes

It is clear from this analysis that in Greece only one barrier exists, related to the non-existence of the subject classrooms. The fact that the students follow all their courses in the same classroom (their classroom) does not permit the teachers to use any instruments and/or ICT.

5. Recommendations

In the context of the centralized greek educational system the apparent challenge is to persuade the Minister to reform the classroom distribution into the school courses. The classrooms must be distributed into the taught

subjects i.e. science, literature, foreign languages, history e.t.c. and not the classes of the students.
It is also believed that the implementation of an objective teachers' evaluation national system with precise IBST parameters is going to trigger the sharp increase of IBST practitioners, because all the supporting infrastructure (Laboratory Science Centers and IBST dedicated School Counsellors) are already in place.

6. Photos of the 14-4-2011 visionary workshop

VISIONARY WORKSHOP FOR PRIMARY EDUCATION SCHOOL COUNSELLORS OF ATHENS DISTRICT (Athens, 5-5-2011)

Introduction

Pedagogical Institute has the authority to invite teachers and stakeholders for training and general information. In this context we invited the Counsellors of Primary Education of the district of Athens. The invitation (in Greek):

ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ
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Ημερ: 5-5-2011
Θέση: ΠΙ, Αιθ. Παπανούτσου, Μεσογείων & Αιγαίου Πελάγους 1-3
Υπεύθυνος: Πάρεδρος Χρήστος Ραγιαδάκος, craq@pi-schools.gr

Αφορά στους Σχολικούς Συμβούλους Αττικής

Αγαπητοί συνάδελφοι

Σας προσκαλώ να συζητήσουμε τρόπους προώθησης της Διερευνητικής Διδασκαλίας στην Πρωτοβάθμια Εκπαίδευση που θα γίνει στο Παιδαγωγικό Ινστιτούτο υπό μορφή Ημερίδας στο πλαίσιο του ευρωπαϊκού έργου "The Pathway to Inquiry Based Science Teaching" (SIS-CT-2010-266624). Ο γενικός σκοπός του έργου είναι η διαμόρφωση και προώθηση ενός πλαισίου διδασκαλίας των Φυσικών Επιστημών με τη διδακτική μεθοδολογία της Διερευνητικής Διδασκαλίας (Inquiry-based science teaching), που προτείνεται από την Ευρωπαϊκή Επιτροπή (Rocard report, 2007, "Science Education Now: A Renewed Pedagogy for the Future of Europe"). Το έργο θα προωθήσει τη διερευνητική διδασκαλία μέσω μιας γενικής επιμόρφωσης των Δασκάλων και των καθηγητών των φυσικών επιστημών, στην οποία ελπίζουμε να είναι καθοριστική η συμμετοχή σας. **ΤΟ ΕΡΓΟ ΜΠΟΡΕΙ ΝΑ ΧΡΗΜΑΤΟΔΟΤΗΣΕΙ ΤΟΠΙΚΕΣ ΕΠΙΜΟΡΦΩΤΙΚΕΣ ΔΡΑΣΤΗΡΙΟΤΗΤΕΣ ΣΑΣ ΜΕ ΑΝΤΙΚΕΙΜΕΝΟ ΤΗ ΔΙΕΡΕΥΝΗΤΙΚΗ ΔΙΔΑΣΚΑΛΙΑ.** Η σελίδα του έργου στο ΠΙ είναι http://www.pi-schools.gr/programs/pathway/.

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11-12 μ.	Α. Κουλουμπαρίτση, σύμβουλος ΠΙ	Συζήτηση για Διερευνητική Διδασκαλία
12-1 μ.μ.	Χ. Μπαμπαρούτσης, πρώην πάρεδρος ΠΙ	«Παράγοντες που επηρεάζουν την πίεση». Μελέτη περίπτωσης διερευνητικής προσέγγισης της διδασκαλίας στην Πρωτοβάθμια Εκπαίδευση
1-2 μ.μ.	Χ. Μπαμπαρούτσης, πρώην πάρεδρος ΠΙ	Συζήτηση για τρόπους προώθησης της Διερευνητικής Διδασκαλίας

Παρακαλώ επιβεβαιώστε τη συμμετοχή σας στον Επιστημονικό Υπεύθυνο του Έργου : Χρήστος Ραγιαδάκος, craq@pi-schools.gr

1. Number of participants per profile

11 Primary School Counsellors from the district of Athens

2. Involvement of the audience in IBSE

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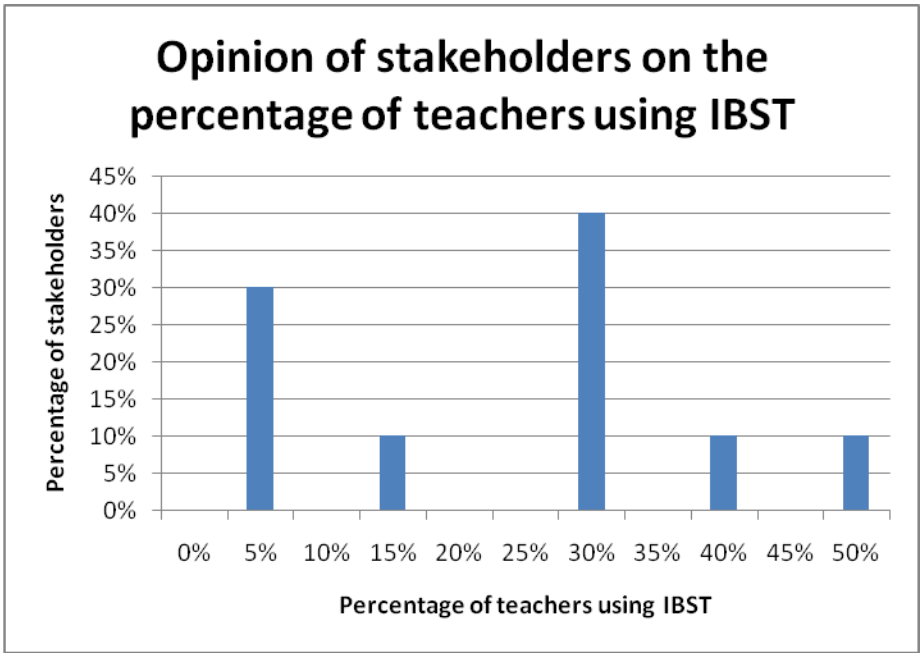

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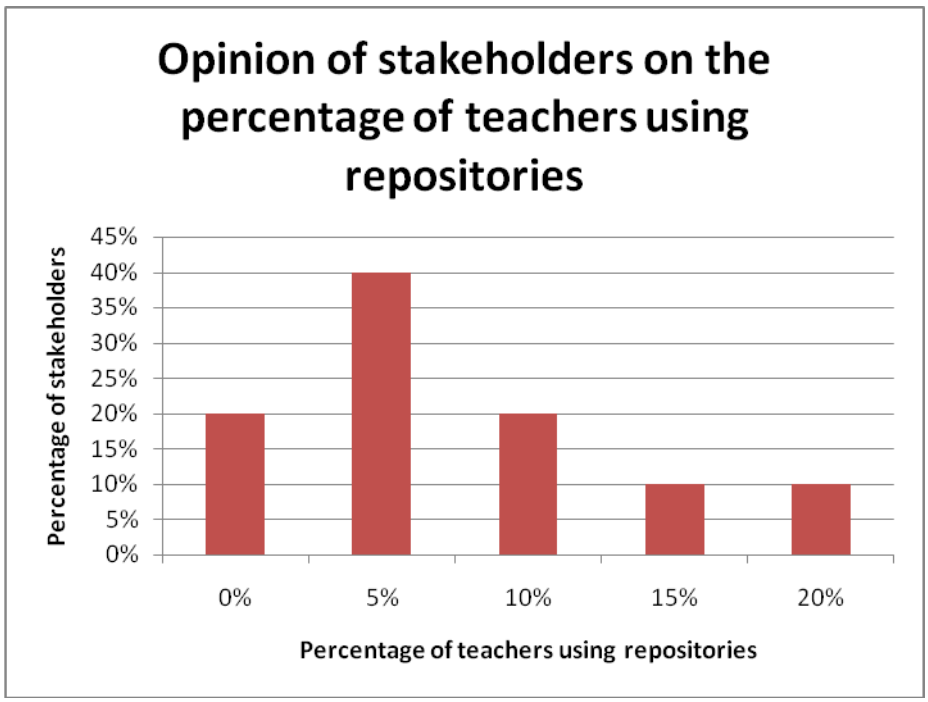

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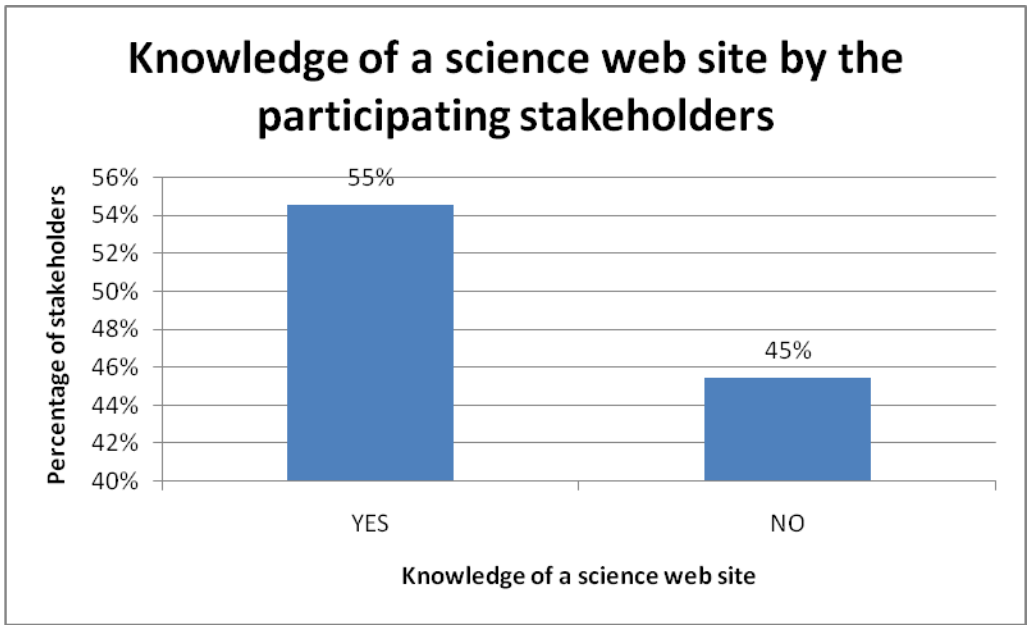

Question 4: *What factors impede IBST in primary education?*

FACTORS IMPEDING IBST	REFERENCES
Need of teaching and preparation time and effort	10
Teachers do not know IB science teaching	5
Teacher centered "culture"	5
Too much content in the curriculum	3
"Fear of too much noise" in the classroom	2
Teachers indifference (cold shoulder)	2

Question 5: *What factors favour IB science teaching in primary education?*

FACTORS FAVOURING IBST	REFERENCES
Appropriate teachers' training	11
Two continuous hours in the science teaching school timetable	6
Teachers evaluation	2
Existence of laboratories	2
Often outdoor teaching	1

4. Conclusions

During the workshop a general discussion on the implementation of the Inquiry-Based Science Teaching took place. According to the recorded opinions we created the following Strengths-Weaknesses-Opportunities-Threats (SWOT) table.

OBJECTIVE: IBST Implementation in Primary Education		
	INTERNAL	**EXTERNAL**
POSITIVE	**Strengths**	**Opportunities**
	• The National Curriculum is based on Inquiry-Based methodology • The School Counselors are state controlled, know and believe in the effectiveness of IBST • The school laboratory centers of physical science may be used to train teachers • Support by the Association of Students' Parents • The internet school network could support IB through uploaded educational scenarios	• Use of the economic resources of the European Programs • The current existence of a general reform wind in the administration • The rapid expansion of the repositories of science educational resources
NEGATIVE	**Weaknesses**	**Threats**
	• The non-existence of initial university training for teachers • The teachers do not stay in school all the school-time • The non-existence of a national objective teachers' evaluation diminishes the willingness of teachers for more effort • The School Counselors cannot enter classrooms • The school directors cannot enter classrooms	• Teachers' strikes

5. Recommendations

It is also believed that the implementation of an objective teachers' evaluation national system with precise IBST parameters is going to trigger the sharp increase of IBST practitioners, because allthe supporting infrastructure (Laboratory Science Centers and IBST dedicated School Counsellors) are already in place.

6. Photo of the 5-5-2011 visionary workshop