



# ***Multiculturalism, Migration, Mathematics Education and Language***

**M<sup>3</sup>EaL Project International Workshop**

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## **Mathematics Education as Cultural Communication**

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# Project Aims

Let us remind ourselves of the project aims and objectives:

The aim is to develop materials to address the multicultural and language aspects of mathematics teaching and learning, especially for students from minority cultures or from a migrant background.

# Project Materials

The project materials should:

- raise awareness of the importance of culture and language in teaching/learning process;
- have a positive effect on attitudes towards cultural difference;
- support the work of the teacher in all classrooms, not only those with minority or migrant students.

# Project Objectives

The project main educational objectives are

- to attend to language;
- to propose teaching units;
- to facilitate interdisciplinary extensions;
- to make pupils more interested and motivated;
- to appreciate positive aspects of different cultures;
- to create conditions for intercultural dialogue;
- to create an inclusive educational setting.

# Now what ?

We have produced materials, now we must use them.

But they need to be used effectively, in a way that will meet the challenges of multilingualism and multiculturalism in our world.

This is not just a matter of teaching materials.

**It is a matter of teaching philosophy, attitudes, and style.**

# Our Multicultural World

In a world of forced cultural interaction we all must overcome stereotypes, fears and suspicions in order to live peacefully, learn from each other, and enjoy the diverse pleasures of multiculturalism.



**Cin cin**



# Our Multicultural World

The history of human existence is one full of multicultural interaction. The challenges and pleasures are not new.



**Cin cin  
Brainwashing  
Typhoon**



# Our Multicultural World

Roma discrimination began 1000 years ago.

The contemporary Syrian refugee crisis is more complicated every day.

There will be more upheavals and forced intercultural interactions.





# Our Multicultural World



# **Our Multicultural World**

So it is not a question of everyone coping with the current situation — it is a question of continued existence and enjoying an increasingly multicultural and multilingual future.

# **Education is (again) the key**

Education is a key tool in the process of our societies becoming better able to enjoy the multicultural nature of our world, and cope with its challenges.

All teachers of all subjects have their part to play. But what is the special contribution that we can make as mathematics teachers ?

# **Education is (again) the key**

If Education is the key—what is the lock  
that needs to be opened ?

**Communication**

Lack of communication is the source of  
fear, and the block to enjoying  
multiculturalism

# The Questions

But what is it, exactly, that mathematics teachers can do to contribute to cultural communication ?

What opportunities do we have, and what resources are available for us to use ?



# Some Answers

## Opportunity 1

### **Mathematics is a non-contentious topic**

- A mathematics classroom is potentially the safest place a minority or migrant child can be outside their home.
- All children have the potential to love or hate mathematics itself—we can control that.

# Some Answers

## Opportunity 2

### **Mathematics begins in a state of equality**

- Mathematical ideas are potentially equally accessible to all students (although their communication may destroy this equality).



# Some Answers

## Opportunity 3

**Mathematics has a history, a present,  
and a future in every country and in  
every society.**

- There are culture/country specific resources to be used in every class in every lesson if we wish.
- And all languages deal with mathematical ideas in some form or another.

# Some Answers

## Opportunity 4

**Mathematics has some features of a universal language.**

- The use of conventional symbols can be mostly culture free.
- There are more commonalities between languages in mathematics than most other subjects
- And that makes the differences even more interesting.

# Some Answers

## Opportunity 5

**Mathematical ways of thinking have more or less universal application.**

- Mathematics has applications that benefit us all.
- A mathematical education can be seen to be useful for us all.

# Learning Together

But let us return to a statement made at the beginning of this presentation:

**Using multicultural and multilingual materials successfully is a matter of teaching philosophy, attitudes, and style.**

# Learning Together

In my view, there are some fundamental characteristics of a multicultural society that determine an optimal approach to multicultural and multilingual teaching.....

# Learning Together

1.

**We are in this together  
(and always will be).**

**An hence:**

**We can all (teachers and students  
together) learn from each other and  
through each other.**

# Learning Together

**2.**

**We will never fully understand each other (or mathematics).**

**An hence:**

**We all (teachers and students together) need to be seen to be constantly learning (both about mathematics and about each other).**



# Learning Together

**3.**

**We need each other (and each other's mathematical ideas).**

**An hence:**

**We actively need to seek out cultural and linguistic insights and accept mutual assistance when learning mathematics.**

# **A Final Thought**

**Multicultural communication is itself a bit like mathematics:**

**It may sometimes be hard work,  
and it may sometimes be  
frustrating,  
but ...**

**it has its own exquisite rewards,  
and it has its own very intense  
pleasures.**

**Thank you for listening.**