



Multiculturalism, Migration, Mathematics Education and Language

M³EaL Project International Workshop

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Questionnaire analysis

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Questionnaire for mathematics teachers

- Objectives

- Questionnaire for maths teachers with minority pupils in the classroom to get information and comments about their experience and needs.
- Basis for designing workshop for teachers

Questionnaire

About you

1. What is the age range of your students?
2. What other subjects do you teach?
- 3a. What is the length of your teaching experience?
- 3b. What is the length of your mathematics teaching practice?
4. Did you ever receive any initial or in-service teacher training for teaching in multicultural classrooms? If yes, which type?

About your school

5. What is the size of population of the village/town your school is situated in?
6. What region is your school located in?
7. What is the (average) percentage of [migrant students] in your class(es)?
8. Does your school have an official program for supporting [migrant students]?

Prior experiences

9. Have you ever taught mathematics to [migrant students]? If not, continue at question 13.
10. Did you encounter any specific issues while teaching maths in these classrooms? If not, continue at question 12.
11. How did you try to handle the situation?
 - a) Did you find suitable materials? Please describe them.
 - b) Did you share the encountered difficulties with other colleagues?
 - c) Did you receive any support from school management? Please describe them.
 - d) Do you see any advantages of having [migrant students] in your classroom? Please describe them.
12. Did you change your teaching strategies when you had [migrant students] in your classroom? Please describe how.

Supporting materials and environments

13. What kind of materials would you need for teaching in multicultural classrooms?
 - a) Supporting pedagogical documents?
 - b) Information about the cultural backgrounds of minority groups?
 - c) Concrete didactic units from various cultural backgrounds?
 - d) What else?

Questionnaire

- 1st part – *About you*

1. What is the age range of your students?

2. What other subjects do you teach?

3a. What is the length of your teaching experience?

3b. What is the length of your mathematics teaching practice?

4. Did you ever receive any initial or in-service teacher training for teaching in multicultural classrooms? If yes, which type?

Questionnaire

- 2nd part – *About your school*
 5. What is the size of population of the village/town your school is situated in?
 6. What region is your school located in?
 7. What is the (average) percentage of [migrant students] in your class(es)?
 8. Does your school have an official program for supporting [migrant students].

Questionnaire

- 3rd part – *Prior experiences*
 9. Have you ever taught mathematics to [migrant students]?
If not, continue at question 13.
 10. Did you encounter any specific issues while teaching maths in these classrooms? If not, continue at question 12.
 11. How did you try to handle the situation?
 - **a)** Did you find suitable materials? Please describe them.
 - **b)** Did you share the encountered difficulties with other colleagues?
 - **c)** Did you receive any support from school management? Please describe them.
 - **d)** Do you see any advantages of having [migrant students] in your classroom? Please describe them.
 12. Did you change your teaching strategies when you had [migrant students] in your classroom? Please describe how.

Questionnaire

- 4th part – *supporting materials and environments*
 - 13. What kind of materials would you need for teaching in multicultural classrooms?
 - **a)** Supporting pedagogical documents?
 - **b)** Information about the cultural backgrounds of minority groups?
 - **c)** Concrete didactic units from various cultural backgrounds?
 - **d)** What else?

Respondents

Partner country	Number of respondents
Austria	31
Czech Republic	12
France	35
Greece	25
Italy	79
Norway	22

Teacher's qualification and experience

Partners	Q1	Q2	Q3.a average	Q3.b average	Q4.a	Q4.b	Q4.c	Komentář
AUS	31	100% M+1	14 years	14 years	0	1	1	
CZ	12-	1 : M 8.9% 5 : M+1 44.6% 5 : M+2 44.6% 1 : M+4 8.9%	13 years	12 years	1 in-service teacher training seminar – multicultural teaching 8.9%	0	0	The most frequent combination: mathematics and sciences / biology, physics, chemistry, biology (9x) 75%
FR	35	100% only mathematics	10 years	10 years	3% (1 / 35)	3% (1 / 35)	3% (1 / 35)	
GR	25	68% (17/25) only mathematics			4% (1 / 25)		4% (1 / 25)	The most frequent combination: mathematics and Geography
IT	79	100% Mathematics and sciences	19 years	18 years	19% (15/79)	14% (11 / 79)	29% (23 / 79)	All lower secondary school teachers teach mathematics and natural sciences
NOR	22	0 : M 1 : M+1 3 : M+2 4 : M+3 14 : M+4+	21 years	19 years	1	0	2	Many different combinations

Pupils' multiculturality

Partners	Q5	Q6	Q7	Q8
AUS	5 : [2] 16.1% 26 : [4] 83.9%	5 : Dolní Rakousko 26 : Vienna	Av. 12% Max. 45% Min. 0%	Yes : 3% (1/31)
CZ	1: [1] 8.3% 2: [3] 16.6% 9: [4] 75%	Prague, South Moravia, East Bohemia, Central Moravia	Av. 6% Max. 20% Min 0%	no
FR	5 : [3] (14%) 30 : [4] (86%)	35 : Creteil	Av. 3% Max 15% Min 0%	46% (16/35)
GR	56% z velkých měst (14/25)	Athens and their surroundings, Thessaly region	Av. 12% Max. 25% Min 4%	92% (23/25) no programme
IT	2 : [1] 2,5% 17 : [2] 21,6% 22 : [3] 27,8% 38 : [4] 48,1%	62 : Tuscanny 5 : Sicily 5 : Marche 7 : other regions	Av. 13% Max 65% Min 0%	Yes : 72% (57/79)
NOR	4 : [2] 20 : [4]	7 Troms 6 VestAgder 4 AustAgder 4 Vestfold 1 Narvik	Av. 8 % Max 40 % Min 0 %	Yes 10 no 12

What do teachers use

- ICT (e.g. Geogebra)
- Worksheets and visual aids
- Literature and books
- Teaching units (prepared by mathematics educators or colleagues)
- In-service training programmes run by Ministry of Education or other regional institutions
- Dictionaries in which pupils can find names of mathematics symbols in their mother tongue
- Textbooks
- Web pages focusing on CLIL lessons and supporting primary school teachers
- Translation by classmates

Communication and support

- Communication among colleagues insufficient (it is mentioned only by one Austrian respondent, one half of Norwegian respondents, in other countries just about one third of respondents)
- Support from “above”
 - In-service teacher training
 - Cooperation with a psychologist and social worker
 - Intercultural council for pupils’ inclusion (Italy)
 - Grants and financial resources
 - Culture mediators
 - Courses of literacy
 - Special equipment for schools
 - Extra lessons
 - Moving the pupil to another class

Advantages of presence of foreigners in the classroom

- Cultural enrichment for all involved parties
- Overcoming prejudice and barriers, increased tolerance
- Gaining knowledge about differences among countries with respect to teaching materials, classroom management, discipline, atmosphere, relationships at schools
- Overall improvement in mathematics (more attention paid to what and how new subject matter is introduced and explained, more didactical aids and teaching methods, culturally enriched teaching materials, this is for benefit of all)
- Sharing different kinds of knowledge between majority and minority pupils
- Enrichment of lessons through new solving algorithms and methods of calculation

Changes in teaching strategies

- More use of individual and group work
- Use of learner centered approaches
- More collaboration among pupils, more tasks, generally slower pace
- Simplifying the language and syntax (clearer assignments and more explanations)
- More use of visual materials and aids, graph, tables, diagrams, schemas, illustrative drawings
- Etymology, history and translation of mathematics concepts
- Careful analysis of materials and language
- Monitoring and analyzing learners' mistakes
- Differentiation

Teachers' suggestions

- Bilingual and monolingual dictionaries
- Supporting language materials, courses of the language for minority pupils
- Adapted textbooks (easily readable and comprehensible, with high proportion of illustration, especially illustrations of key terms...)
- Visual aids
- Presence of assistants
- ICT, interactive boards and access to internet, software for translation of spoken word, videocameras.
- Lower number of pupils in the classroom, in-service teacher training
- Information about educational background of minority pupils, mathematics they were doing, syllabus, pedagogical documents and standards in their country of origin, about school practice etc.