

QUESTIONNAIRE FOR MATHEMATICS TEACHERS – ANALYSIS

GREECE

Answers to the questionnaire were received from 44 in-service teachers, of whom 25 are teachers in the lower secondary school (teaching 12-15 years old pupils), 8 teachers are in the upper secondary school (teaching 15-18 years old pupils) and 11 are in the primary school (teaching 6-11 year old pupils).

The teachers came from the Regions of Attica (Athens, outskirts) and of Thessaly (Volos and outskirts). 10 teachers are working in towns, 2 teachers in villages and 32 teachers in places with more than 10000 inhabitants. The average length of teaching is 19 years and the length of teaching mathematics 18 years, varying from 5 to 30 years.

In the lower secondary classes 8 teachers are teaching some other subjects: geography, professional orientation and environmental education. In the upper secondary classes there are 3 teachers who are also teaching astronomy. In the primary classes it is common for teachers to teach most if not all the subjects of the school programme.

Almost all the lower secondary teachers claim that they got no training or education for teaching in multicultural classes. One teacher just mentions a presentation about the theme of multiculturalism he attended once during his undergraduate studies and how useful it became for him when he had to teach in a multicultural class. There is no significant difference in the others two groups of teachers (upper and primary teachers). One teacher of each group claims that the preparatory training program he attended just before starting teaching in school had multiculturalism as one of its themes and two upper-secondary teachers mention that they have recently attended (before /during the last 12 months) an in service seminar about multiculturalism which they evaluate positively as it was associated with applications in the classroom.

In the lower secondary classes on average 12 % are immigrant/ minority pupils, varying from 4% (1 class) to 25 %. Classes in towns with a population higher than 5000 and in cities with a population larger than 10 000 appear to have similar numbers of immigrant / minority pupils, while in small towns the proportion of pupils from different culture drops to 8%. As expected, primary school classes have more immigrant pupils (19%), whereas in the upper secondary classes this proportion drops to 6%, varying from 0% to 5% (3 classes). Several teachers from all the three levels of education mentioned the reduction in the percentage of immigrant pupils in recent years (families leave the country).

Only 5 teachers of the total sample state that the school has an official programme for support of immigrant children, mostly programmes of teaching Greek as second language (referred as supplementary teaching about the requirements of language classes).

While all of the teachers claimed that there are minority/ immigrant students (at least one student) in their classes, when asked about their experience in teaching in multicultural classes only 61% of the teachers respond positively. In our opinion, this “contradiction” could be interpreted by the fact that in many classes- as noticed by teachers- pupils of different cultural origins have been born in Greece, so they already had sufficient communicative skills in the Greek language. In the same line perhaps we could also interpret the low percentage of teachers (25%) who claim they have not met special problems when teaching pupils with immigrant/minority background.

Concerning environment and support, 2 teachers claim that they received support from school management and 13 teachers (30%) shared the problems with other teachers. Of all teachers respondent, 25% of the teachers saw advantages in teaching in multicultural classes. According to them, the benefits are associated only with the teaching of others subjects and not with math (1 teacher) and two teachers state that having pupils from other cultures in the class make students of the dominant culture develop empathy towards diversity; the rest of the teachers who answer positively did not specify their answer.

From all teachers, 22% (10 teachers) felt forced to look for appropriate materials they could use for teaching in multicultural classes. As suitable material, teachers mention the use of software and geometric instruments, worksheets, visual materials and two teachers answered that they used maths history and a cross-disciplinary approach. One teacher answered that he/she made material by him/herself without describing the type of the material he/she made. A teacher that taught in a multicultural type school, many years ago, wrote: *the students' level was not suitable to deal with this situation, because there were students that couldn't count or read.*

With respect to teaching strategies, about 50% of all teachers in our sample and 56% of lower secondary teachers respond positively. Simplification was the more common strategy appeared. Some teachers don't clarify what kind of simplification they used while others speak about math terminology or vocabulary in general. A second common strategy was spending more time for these students. The use of more visual material, more homework, collaborative teaching, more examples and slow pacing during the teaching were also referred as preferred strategies. One teacher answered: *I used mathematical problems adapted in their interests and their cultural background*, while another: *no change of strategies, because I didn't have the appropriate conditions.*

The kind of materials that respondents think that they would need for teaching in multicultural classrooms are: a) Supporting pedagogical documents (64%), b) Information about the cultural backgrounds of minority groups (82%), and c) Concrete didactical units from various cultural backgrounds (77 %). When few teachers became more specific about the kind of material needed, they most often mentioned a dictionary of mathematics terminology in the pupil's language, and two teachers suggest that new technologies could be used efficiently (internet connection, interactive blackboard).