LITERATURE ON TEACHING IN MULTICULTURAL CONTEXTS

GREECE

a. Didactical resources available to mathematics teachers working in multicultural contexts

	Sites	Sort description
1	http://www.museduc.gr/el/σχολικα-βιβλια/βιβλία-για-το-γυμνάσιο/μαθηματικά	"*Mathematics in an environment designed for autonomous learning* ' This educational material is a proposal for an alternative approach to mathematics teaching. This is a material bank stock of 'openness' activities which encourage learner's autonomy, encourage the use of a plurality of data that come from his everyday life and provide significant opportunities for introduction in mathematics knowledge and thinking as a product of human activity. The main body of the material is a product that come from training package SMILE (Secondary Mathematics Independent Learning Environment), set up in Great Britain and has been translated and adapted in Greek reality.
2	http://www.oepek.gr/pdfs/t-Yliko.pdf	Organization for teachers training (ΟΕΠΕΚ). It is a material designed to support the training of teachers that teach in Reception Class Scheme and the supplementary tutorial classes Only indirectly reference to mathematics teaching.
3	http://www.scribd.com/doc/105691456/ΕΤΕΡΟΤΗΤΑ-ΣΤΗ-ΣΧΟΛΙΚΗ-ΤΑΞΗ-ΚΑΙ-ΔΙΔΑΣΚΑΛΙΑ-ΤΗΣ-ΕΛΛΗΝΙΚΗΣ-ΓΛΩΣΣΑΣ-ΚΑΙ-ΤΩΝ-ΜΑΘΗΜΑΤΙΚΩΝ-Η-ΠΕΡΙΠΤΩΣΗ-ΤΩΝ-	It is referred as training guidelines, but actually include some theoretical text included one regarding language's teaching and another language minorities and mathematics education. This material is product of the previous phases of Roma Education

	ΤΣΙΓΓΑΝΟΠΑΙΔΩΝ	Program.
4	http://www.metaixmio.gr/images/evdoxos/24251.pdf	A corpus of papers regarding Muslim children Education
5	http://hdl.handle.net/10795/234	Guide training material for repatriated and foreign students of low secondary school
6	http://repository.edulll.gr/edulll/handle/10795/658	It is about a proposal for interdisciplinary that among other subjects mathematics could be include.

b. Literature on teaching math in multicultural classes

1	Teaching Mathematics in Multilingual Classrooms Núria Gorgorió and Núria Planas *Educational Studies in Mathematics* Vol. 47, No. 1 (2001), pp. 7-33 http://pagines.uab.cat/nuria_planas/sites/pagines.uab.cat.nuria_planas/files/teachingmathematics_PROTEGIDO.pdf.	The paper highlights the integrated nature of the social, cultural and linguistic aspects of mathematics teaching and learning, and illustrates the fact that, even if the mathematical language can be considered universal, the language of 'doing mathematics within the classroom' is far from being universal.
2	Orey, D. C., Rosa, M. (2004), Ethnomathematics And The Teaching & Learning Mathematics From A Multicultural Perspective, ICME10. http://www.dm.unipi.it/~favilli/Ethnomathematics_Proceedings_ICME10.pdf	They discuss concepts of multicultural education and multicultural mathematics hat we have found useful in the interpretation of an ethnomathematics program for teacher professional development in their work in Brazil and the United States.
3	Dolly van Eerde Maaike Hajer, (2005), LANGUAGE SENSITIVE MATHEMATICS TEACHING IN A MULTICULTURAL CLASSROOM HOW STUDENTS' TALKING AND WRITING CAN ENLIGHTEN HIDDEN PROBLEMS http://www.mathematik.uni-dortmund.de/~erme/CERME4/CERME4_WG10.pdf	This paper reports on a design experiment, in which instructional materials –partly web based- are developed to promote interaction and to support teachers and students in multiethnic mathematics classrooms. The experiment shows that working with the materials opens the way towards integrated mathematics and language learning.

4	http://etnomatematica.org/articulos/Favilli1.pdf Favilli, Franco; Oliveras, M.Luisa& César, Margarida http://www.dm.unipi.it/~didattica/CERME3/WG10/papers_doc/TG10-Francofavilli.doc	Research on the framework of European project provides interesting findings on conceptions, attitudes, strategies and needs manifested by teachers both regarding their pupils and their own practices. This paper presents some of these empirical evidences, obtained from a first analysis of a questionnaire submitted to maths teachers in lower secondary schools.
5	Núria Gorgorió & Núria Planas 2005. RECONSTRUCTING NORMS, In Chick, H. L. & Vincent, J. L. (Eds.). Proceedings of the 29th Conference of the International Group for the Psychology of Mathematics Education, Vol. 3, pp. 65-72. Melbourne: PME. http://www.emis.de/proceedings/PME29/PME29RRPapers/PME29Vol3GorgorioPlanas.pdf	Norms, both sociomathematical norms and norms of the mathematical practice, as cultural scripts influenced by social representations, mediate the learning of mathematics in multicultural classrooms. When taking into account the particular circumstances in which mediation occurs, there is a need for a move from a cultural perspective to a broader sociocultural one.
6	Gorgorió, N., & Planas, N. (2005). Social representations as mediators of mathematics learning in multiethnic classrooms. European Journal of Psychology of Education, 20(1), 91-104. http://fractus.uson.mx/Papers/CERME4/Papers%20definitius/10/Planas.Gorgorio.pdf	They discuss issues of socio-mathematical norms and social representations in mathematics classroom. They exemplify how the transformation of norms into practice allocates some immigrant students within different categories form those in which local students are placed. (Similar to the above one)
7	Elbers, E. & M. de Haan (2005). The construction of word meaning in a multicultural classroom. Mediational tools in peer collaboration during mathematics lessons. European Journal of Psychology of Education, 20(1), 45-59. http://libra.msra.cn/Publication/11170284/the-construction-of-word-meaning-in-a-multicultural-classroom-mediational-tools-in-peer	In this article, they examine the construction of word meaning by students during collaborative activities in a multicultural classroom at a Dutch primary school, where Dutch (as language experts) and minority students collaborate. It revealed four patterns: (1) ignoring a question about the meaning of a word, (2) showing the meaning using gestures, (3) explaining, or (4) discussing word meaning)

8	Clarkson, P.C. (2006b). Multicultural classrooms: Contexts for much mathematics teaching and learning. In F. Favilli (Ed.), Ethnomathematics and mathematics education (pp. 9-16). Pisa, Italy: Tipografia Editrice Pisana. http://www.dm.unipi.it/~favilli/Ethnomathematics_Proceedings_ICME10.pdf	Focus on: the notion of multiple contexts of classrooms, because of the variety of possible combinations of cultures and languages being present, in emphasized as potentially being an important factor that has not been recognized so far in research.
9	Joana Latas, Darlinda Moreira (2012), EXPLORING CONNECTIONS BETWEEN LOCAL AND GLOBAL MATHEMATICS, 12th International Congress on Mathematical Education. http://icme12.org/upload/UpFile2/TSG/0362.pdf	This article highlights the role of cultural mathematics in the development of the predisposition to establish mathematical connections. Such an objective is framed in a broader investigation (Latas, 2011) in which a curricular project was developed, whose conceptualization followed an ethnomathematical approach.
10	Stathopoulou, C., & Kalabasis, F. (2002). Teaching mathematics to first grade Romany children through familiar every day money dealings. In Proceedings of the Third International Mathematics Education and Society Conference, Helsingør, Denmark. http://www.mes3.learning.aau.dk/All_Doc.htm	It discuss the role of informal mathematics knowledge in mathematics teaching/learning
11	Presmeg, N. (2007). The role of culture in teaching and learning mathematics. In F. K. Lester (Ed.) Second handbook of research on mathematics teaching and learning (pp. 435-458). Charlotte, NC: Information Age Publishing. http://www.kaputcenter.umassd.edu/downloads/symcog/bib/culChapJune05.pdf	This chapter highlights some key notions that have explanatory power or usefulness in the central focus, which is the role of culture in learning and teaching mathematics.

12	Quintos, B. (2008). Culture + Pedagogy + Mathematics: Multiple perspectives in a Latino community. Ph.D. Dissertation, The University of Arizona, Tucson, AZ. http://books.google.com/books?id=xZNYrZUYH4MC&printsec=frontcover#v=onepage&q&f=false	Explores the influence of a teacher and teaching practice, with a vision of social justice, on Latino/a students learning mathematics. The data are discussed in two focal points: the classroom community and families.
13	Minority status and culture: local constructions of diversity in a classroom in the Netherlandsp 1215-1224 Mariëtte de Haan, E. P. J. M. Elbers http://igitur-archive.library.uu.nl/fss/2006-0801-202721/Elbers_04_Minority-status-and-culture.pdf	The paper argues how, at the level of classroom practice, culturally learned experiences are shaped by status relationships and, at the same time, how status relationships are expressed in cultural formats. Moreover, it is also argued that at a larger social level, collective attitudes towards schooling develop as a co-construction between cultural processes and status issues.
14	Chronaki, A. (2005). Learning about 'learning identities' in the school arithmetic practice: The experience of two young minority Gypsy girls in the Greek context of education. European Journal of Psychology of Education, XX, 61-74.	The present study explores the experience of two young Gypsy girls in solving school arithmetic tasks in interaction with an adult who supports their participation.
15	Sarah Blanchard (2011), Teachers' Perceptions of Immigrant Students and Expectations of Achievement http://paa2011.princeton.edu/papers/112446	This work is the first to use a nationally representative sample of high school students (ELS:2002) to examine English and math teachers' perceptions of hard work and expectations of college completion among immigrant students and how these views are both racialized and gendered.
16	Laura Burr, Richard Kitchen (2009). Mathematical Equity for Immigrant Students through Formative Assessment. http://math.arizona.edu/~cemela/english/content/workingpapers/NCTM_09_Presession_Burr.pdf	Using a formative assessment format that we refer to as the "interactive interview protocol," two interviewers created a learning environment in which the four participating students had multiple opportunities to solve and then refine their solutions to the tasks.
17	Multicultural and Diversity Education: A Reference	"Diversity and Multicultural Education: A Reference Handbook"

	Handbook http://books.google.com/books?id=ZgNc-ycrzgsC&dq=multicultrual+education+appelbaum&lr=&source=gbs_navlinks_s	examines the political and educational arguments for and against multicultural education, provides a range of curriculum approaches, describes the dilemmas of assessment, and explores political and legal issues. Also included are a chronology, directories, and bibliographies.
18	Nelson, David (1993). Others Multicultural Mathematics: Teaching Mathematics from a Global Perspective. http://www.eric.ed.gov/ERICWebPortal/search/detailmini.jsp?_nfpb=true&_&ERICExtSearch_SearchValue_0=ED365767&ERICExtSearch_SearchType_0=no&accno=ED365767	The teaching of mathematics from a multicultural perspective is discussed.
19	School mathematics and its everyday other? Revisiting Lave's 'Cognition in Practice' Authors: Christian Greiffenhagen and Wes Sharrock http://www.academia.edu/283185/School_mathematics_and_its_everyday_other_Revisiting_Laves_Cognition_In_Practice_	{not so relevant, but interesting)
20	Guida de Abreu1, (2005) CULTURAL IDENTITIES IN THE MULTIETHNIC MATHEMATICAL CLASSROOM. P 1131-1140 http://www.mathematik.uni-dortmund.de/~erme/CERME4/CERME4_WG10.pdf	This paper explores the significance of cultural identities in the multiethnic mathematical classroom from students' and teachers' perspectives.
21	Stathopoulou, Ch.: 2003, The Connection Between Cultural Context and Teaching/Learning of Mathematics: An Ethnographic Study on a Class of Romany Students and on Their Community of Origin, unpublished Ph.D.	

	Dissertation, Aegean University, Rhodes, Greece.	
22	Nelson, David (1993). Others Multicultural Mathematics: Teaching Mathematics from a Global Perspective. http://www.eric.ed.gov/ERICWebPortal/search/detailmini.jsp?_nfpb=true&_&ERICExtSearch_SearchValue_0=ED365767&ERICExtSearch_SearchType_0=no&accno=ED365767	The teaching of mathematics from a multicultural perspective is discussed.

c. Literature on the role of the language in mathematics teaching and learning

1 2	Schleppegrell, M. J. (2007).The linguistic challenges of mathematics teaching and learning: A research review. *Reading & Writing Quarterly*, 23(2), 139-159. http://camsp.net/documents/Homework%20Day%202%20&%203%20math_schleppegrell.pdf and/or β) Moschkovich, J., (2011) (Ed.). *Language and mathematics education: Multiple perspectives and directions for research* (pp. 73-112). Charlotte, NC: Information Age Publishing	A) It synthesizes research by applied linguists (Systemic Functional Linguistics) and mathematics education. Provides pedagogical strategies for moving students from informal talking about mathematics into the mathematical "register" B) Interdisciplinary reviews of the research on issues of language in mathematics learning and teaching. Four different perspectives: mathematics education (Moschkovich), Cultural-Historical-Activity Theory (Gutiérrez, Sengupta-Irving, & Dieckmann), *Systemic functional linguistics (Schleppegrell)*, and assessment (Solano-Flores).
3 4 5	A) Pimm, D. (1987) *Speaking Mathematically: Communication in Mathematics Classrooms*, London, Routledge and Kegan Paul. B) Adams, T. (2003). Reading mathematics: More than words can say. *The Reading Teacher*, 58 (8), 219-234.	A, B, C : They focus on discrete linguistic features of communication in math classroom (texts, written or oral) Relationships of informal ways of talking and mathematical "register" as systems of meaning-making

	C) Spanos, G., Rhodes, N. C., & Crandall, J. (1998). Linguistic features of mathematical problem solving: Insights and applications. In R. Cocking & J. Mastre (Eds.), *Linguistic andcultural influences on learning mathematics* (pp. 221-240). Hillsdale, NJ: Erlbaum	
6 7	Barwell, R., Leung, C., Morgan, C. & Street, B. (Eds.) (2005). Language and Maths. Special Issue of Language and Education: An International Journal, Vol. 19 no. 2, pp. 97-169 Barwell, R. 2005 Integrating language and content: Issuesfrom the mathematics classroom. Linguistics and Education, Vol 16. Issue 2.	They report analysis of data from a recent study into the participation of students learning English as an additional language (EAL) in mainstream mathematics classrooms in the UK.
8 9 10 11	a) Lemke, J. L. (2003). Mathematics in the middle: Measure, picture, gesture, sign, and word. In M. Anderson, A. Sáenz-Ludlow, S. Zellweger, & V. V. Cifarelli (Eds.), *Educational perspectives on mathematics as semiosis: From thinking to interpreting to knowing* (pp.215-234). Ottawa, ON, Canada:Legas Publishing. http://academic.brooklyn.cuny.edu/education/jlemke/papers/handbook.htm b) O'Halloran, K. L. (2005). *Mathematical discourse: Language, symbolism and visual images*. London: The Continuum International Publishing Group, Ltd.	The multisemiotic construction of mathematics discourse / and social semiotics

	c) Luciana C. De Oliveira L.C and Cheng Dazhi (2011). Language and the Multisemiotic Nature of Mathematics, The Reading Matrix, Volume 11, Number 3. http://www.readingmatrix.com/articles/september_2011/oliveira_cheng.pdf d) Morgan, C. (2006). What does social semiotics have to offer mathematics education research? *Educational Studies in Mathematics, 61*(1 & 2), 219-245	De Oliveira and Dazhi explore the potential of multisemiotic perspective for L2 learners Morgan provides a comprehensive presentation of Social Semiotics as analytic tool (based on the work of MAK Halliday) for the description and the interpretation of the functioning of school mathematical activity (texts written, oral, nonological, dialogical)
12	Setati, M. Molefe and Mampho Lagna. (2008) Using language as a Transparent Resource in the teaching and learning of Mathematics in a Grade 11 Multilingual Classroom. Pytharoras, 67, pp 14-25. http://pythagoras.org.za/index.php/pythagoras/article/viewFile/70/74	The authors explore how the learners' home language can be used in multilingual classrooms. They argue for the deliberate, proactive and strategic use of the learners' home languages as a transparent resource in the teaching and learning of mathematics in multilingual classrooms
13	Moschkovich., J. (2007). Using Two Languages When Learning Mathematics, Educational Studies in Mathematics, Volume 64, Issue 2, pp 121-144	By using an example of a mathematical discussion between bilingual students she illustrates how sociolinguistics can inform analyses of bilingual mathematical conversations.
	Stathopoulou, Charoula; Kalabasis, Fragiskos. *Educational Studies in Mathematics* vol. 64 issue 2 February 2007. p. 231 – 238. Language and Culture in Mathematics Education: Reflections on Observing a Romany Class in a Greek School. http://journals.ohiolink.edu/ejc/article.cgi?issn=00131954	Based on research on the spot discusses the way language as a cultural characteristic affects Roma children' mathematics learning

	&issue=v64i0002&article=231_lacimerciags	
14	Peter Appelbaum, Chapter 3: You are a mathematician, in Embracing Mathematics: On becoming a teacher and changing with mathematics, pp. 91 - 129. Routledge.	It discusses the way adults communicating with children use terms of everyday language that are also used in mathematics and how it affects their mathematics learning.
15	http://www.buchhandel.de/WebApi1/GetMmo.asp?MmoId=1003625&mmoType=PDF. Mathematical literacy Jablonka, E. 2003 In: *Second International Handbook of Mathematics Education.*Bishop, A. J., Clements, M. A., Keitel, C., Kilpatrick, J. & Leung, F. K. S. (eds.). Berlin: Springer, p. 77-104. 28 p. (Springer International Handbooks of Education; No. 10)	The argumentation is that it is not possible to promote a conception of mathematical literacy without the same time—implicitly or explicitly—promoting a particular social practice
16	http://subs.emis.de/journals/ZDM/zdm053a16.pdf, Reflecting mathematics: an approach to achieve mathematical literacy Katja Lengnink, Darmstadt (Germany)	In this article a framework for the integration of reflection and assessment in the teaching practice is developed. An illustration through concrete examples is given.

d. Literature on teaching maths and/or scientific subjects to L2 learners

17 18 19	Coggins, D., Kravin, D., Coates, G. D., & Carroll, M. D. (2007). *English language learners in the mathematics classrooms*. Thousand Oaks, CA: Corwin Press. Kersaint, G., Thompson, D. R., & Petkova, M. (2009). *Teaching mathematics to English language learners*. New	Drawing on ESL L2 scholarship, they provide strategies that teachers can use to address needs in mathematics teaching (resource model)

	York, NY: Routledge. Richard Barwell (Ed.). (2009). *Multilingualism in mathematics classrooms: Global perspectives*. Bristol, UK: Multilingual Matters,	
20	Lovstedt, Ann-Christin (2010) Reading to Learn Maths: A teacher professional development project in Stockholm.http://readingtolearn.com.au/images/pdf/October/r2l%20maths%20report.pdf	Reading to Learn is a program based on genre pedagogy and designed to integrate the teaching of literacy with subject teaching in all areas of the school curriculum, including mathematics.
21	Echevarria, J., Vogt, M. E., and D. J. Short (2009). The SIOP Model for Teaching Mathematics to English Learners. Allyn & Bacon, Inc. (October 16, 2010	Sheltered English Instruction (SEI)is an approach to teaching mathematical content while supporting the students' academic English language development