**Βίντεο με ομιλία της**

Maria Alessandra Mariotti, 2/26/18: *From using artifacts to mathematical meanings...*

<https://www.youtube.com/watch?v=eN_3y_uNIHg>

**Βιβλιογραφία για σημειωτική δραστηριότητα (Notations/inscriptions)**

Bartolini Bussi, Μ.Γ. & Baccaglini-Frank, Α. 2015. Geometry in early years: sowing seeds for a mathematical definition of squares and rectangles. *ZDM Mathematics Education, 4,* 391–405.

Carruthers, E., and M. Worthington. 2003*. “Children’s Mathematics: Making Marks, Making Meanings*.” London: Sage Publications

Carruthers, E., and M. Worthington. 2005. “Making Sense of Mathematical Graphics: The Development of Understanding Abstract Symbolism.” *European Early Childhood Education Research Journal* 13(1): 57–79. <https://doi.org/10.1080/13502930585209561>

Curcio, F. R., and S. Folkson. 1996. “Exploring Data: Kindergarten Children Do it their Way.” *Teaching Children Mathematics* 2: 382–385.

Edens, K. & Potter, E. (2007). The relationship of drawing and mathematical problem solving: draw for math tasks. *Studies in Art Education a Journal of Issues and Research,* *48,* (3), 282-298.

English, L. D. 2012. “Data Modelling with First-Grade Students.” *Educational Studies in* Mathematics 81 (1): 15-30.

Hughes, M (1986). *Children and number: difficulties in learning mathematics*. Oxford: Basil Blackwell.

Kato, Y., Kamii, C., Ozaki K. & Nagahiro M. (2002). Young children’s representations of group of objects: the relationship between abstraction and representation. *Journal for Research in Mathematics Education, 33*(1) 30-45.

Klein, E., Teubal, E. & Ninio, A. (2009). Young children’s developing ability to produce notations in different domains. In C. Andersen, N. Scheuer, M. P. Pérez Echeverría & E. Teubal (Eds.), *Representational systems and practices as learning tools* (pp. 39-58). The Netherlands, Rotterdam: Sense Publishers

Munn, P. (1994). The early development of literacy and numeracy skills. *European Early Childhood Education Research Journal, 2*(1), 5–18.

Nemirovsky, R. (2009). A reading of the volume from the perspective of symbol- use. In C. Andersen, N. Scheuer, M. P. Pérez Echeverría & E. Teubal (Eds.), *Representational systems and practices as learning tools* (pp. 281-296). The Netherlands, Rotterdam: Sense Publishers.

Papandreou, M. (2009). Preschoolers’ semiotic activity: additive problem-solving and the representation of quantity. In Tzekaki, M., Kaldrimidou, M. & Sakonidis, C. (Eds.). *Proceedings of the 33th Conference of the Internationall Group for the Psychology of Mathematics Education,* Vol. 4. pp. 321-328. Thessaloniki, Greece: PME. <https://www.researchgate.net/publication/260713545_PRESCHOOLERS'_SEMIOTIC_ACTIVITY_ADDITIVE_PROBLEM-SOLVING_AND_THE_REPRESENTATION_OF_QUANTITY>

Papandreou, M. (2014). Communicating and thinking through drawing activity in early childhood. *Journal of Research in Childhood Education.* 28(1),85-100, DOI: 10.1080/02568543.2013.851131. <https://www.researchgate.net/publication/260713545_PRESCHOOLERS'_SEMIOTIC_ACTIVITY_ADDITIVE_PROBLEM-SOLVING_AND_THE_REPRESENTATION_OF_QUANTITY>

Papandreou, M. (2019). Young children’s representational practices in the context of self-initiated data investigations, *Early Years,* DOI: 10.1080/09575146.2019.1703101

Pérez Echeverría, M. P., & Scheuer, N. (2009). External representations as learning tools: An introduction. In C. Andersen, N. Scheuer, M. P. Pérez Echeverría & E. Teubal (Eds.), *Representational systems and practices as learning tools* (pp. 1- 16). The Netherlands, Rotterdam: Sense Publishers.

Poland, M. & van Oers, B. (2007). Effects of schematizing on mathematical development. *European Early Childhood Education Research Journal*, *15*(2), 269–293.

Saundry, C., & Nicol, S. (2006). Drawing as problem solving: Young children’s mathematical reasoning through pictures. In J. Notova, H.Moraova,M. Kratka, & N. Stelikkova (Eds.), *Proceedings of the 30th conference of the international group for the psychology of mathematics education* (Vol. 5, pp. 57–64). Prague, Czech Republic: PME.

Tolchinsky, L. (2007). The multiple functions of external representations: Introduction. In E. Teubal, J. Dockrell & L. Tolchinsky (Eds.), *Notational knowledge: Developmental and historical perspectives* (pp. 1–10). The Netherlands, Rotterdam: Sense Publishers.

Woleck, K. R. 2001. “Listen to their Pictures: An Investigation of Children’s Mathematical Drawings.” In *the Role of Representation in School Mathematics,* edited by A. A. Cuoco, and F. R. Curcio, 215-227. Reston, VA: NCTM.

Worthington, M., M. Dobber, and B. van Oers. 2019. “The Development of Mathematical Abstraction in the Nursery.” *Educational Studies in Mathematics,* [doi: 10.1007/s10649-019-09898-3](https://doi.org/10.1007/s10649-019-09898-3" \t "_blank).

Παπανδρέου, Μ. & Καραγιώργου, Ι. (2009). Συμμετοχή των γονέων στην μαθηματική εκπαίδευση και αξιολόγηση των παιδιών τους: μια εφαρμογή στο νηπιαγωγείο. Στο Φ. Καλαβάσης, Σ. Καφούση, Μ. Χιονίδου-Μοσκοφόγλου, Χ. Σκουμπουρδή & Γ. Φεσάκης (Επιμ.), 3ο συνέδριο ΕΝΕΔΙΜ: *Μαθηματική εκπαίδευση και Οικογενειακές πρακτικές* (σελ. 203-212). Ρόδος: Πανεπιστήμιο Αιγαίου

Παπανδρέου, Μ. & Τοκμακίδου, Ε. (2011). Επίλυση μαθηματικών προβλημάτων και αναστοχαστικές διαδικασίες μαθητών Α΄ δημοτικού. Στο Μ. Καλδρυμίδου (Επιμ.) 4ο Πανελλήνιο συνέδριο ΕΝΕΔΙΜ: *Η τάξη ως πεδίο ανάπτυξης της μαθηματικής δραστηριότητας*. Ιωάννινα: Παν/μιο Ιωαννίνων, (σελ. 391-400), ISBN: 978-960-93-3533-1. <http://enedim2011.uoi.gr/index.htm>

Παπανδρέου, Μ., Σοφιανοπούλου, Ι., Καλογιαννίδου, Α. & Μπιρμπίλη, Μ. (2015). ‘Το τεντώνω και βλέπω πόσο ψηλός είμαι!’ παιδιά νηπιαγωγείου αναπαριστούν γραφικά τις ιδέες τους για το ‘μέτρο’ και τη χρήση του. Στο Δ. Δεσλή, Ι. Παπαδόπουλος, & Μ. Τζεκάκη (Επιμ.), *Πρακτικά του 6ου Πανελλήνιου συνέδριου της* *ΕΝΕΔΙΜ: Μαθηματικά ΜΕ διάκριση και ΧΩΡΙΣ διακρίσεις* (σελ. 570-579)*.* Θεσσαλονίκη: ΕΝΕΔΙΜ. <http://enedim6.web.auth.gr/>

**Gestures and mathematics**

Elia, I., Gagatsis, A., & van den Heuvel-Panhuizen, M. (2014). The role of gestures in making connections between space and shape aspects and their verbal representations in the early years: findings from a case study. *Mathemetics’ Education Research Journal, 26*(4), 735-761.

Goldin-Meadow, S. (2005). Hearing gesture: How our hands help us think. Cambridge, MA: Harvard University Press.

