
ZMATH 2016e.01042**Sambolić Beganović, Amela****The role of mathematical representations in interactive iBoard materials. (Vloga matematičnih reprezentacij v i-gradivih za delo na i-tabli.)**

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Summary: Teachers of Mathematics, who have the interactive board (iBoard) in the classroom and use it for instructions, create their own original interactive materials (i-materials) as a rule. In the article we critically analyse the i-materials for the i-board in primary school as employed by mathematics teachers. We explore to what extent they prepare activities involving external mathematical representations (enactive, iconic and symbolic) on the cases of individual sheets in i-materials (i.e. i-slides), and the role of the mentioned representations in understanding mathematical concepts. An analysis of 588 6th grade individual sheets of i-materials (i.e. i-transparencies) for the topics of arithmetic and algebra, and for the 9th grade the topic of Geometry showed a high proportion of iconic and symbolic representations in teaching content geometry and measurement in the 9th grade. On individual i-slides in i-materials we also examine the conceptual solutions of mathematics teachers in creating activities connected to i-board software, which tend towards solutions in which we can note the process of transition between different representations. Some of these solutions in the article are also illustrated by examples of individual i-transparencies. An in-depth study of individual i-transparencies allowed us a deeper insight into the characteristics of i-materials which teachers of mathematics prepare for the i-board. It turns out that mathematics teachers are aware of the potential of the i-board, although they currently aren't sensibly exploiting it. In the paper we also discuss the role of teaching materials (in our case i-materials for the i-board) in the development of mathematical concepts and the impact of teaching materials on students' knowledge. We conclude the article with directions for the creation of i-materials which sensibly and didactically appropriately include mathematical representation.

Summary: Učitelji matematike, ki imajo interaktivno tablo (i-tablo) v razredu in jo tudi uporabljajo, za pouk praviloma ustvarjajo lastna avtorska interaktivna gradiva (i-gradiva). V članku kritično analiziramo i-gradiva učiteljev matematike za delo na i-tabli v osnovni šoli. Na posameznih listih v i-gradivih (t. i. i-prosojnicah) smo raziskovali, koliko učitelji matematike pripravljajo dejavnosti, ki vključujejo zunanje matematične reprezentacije (enaktivne, ikonične in simbolne) in kakšna je vloga le-teh pri razumevanju matematičnih pojmov. Analiza 588 posameznih listov i-gradiv (t. i. i-prosojnic) za 6. razred na temo aritmetika in algebra ter za 9. razred na temo geometrija je pokazala visok delež ikoničnih in simbolnih reprezentacij pri vsebini geometrija in merjenje v 9. razredu. Prav tako so nas na posameznih i-prosojnicah v i-gradivih zanimale idejne rešitve učiteljev matematike pri ustvarjanju dejavnosti v povezavi s programsko opremo i-table, ki težijo rešitvam, iz katerih je mogoče razbrati proces prehajanja med različnimi reprezentacijami. Nekatere izmed teh rešitev v članku tudi ponazorimo s primeri posameznih i-prosojnic. Poglobljeno preučevanje posameznih i-prosojnic nam je omogočilo globlji uvid v značilnosti i-gradiv, ki jih učitelji matematike pripravljajo za delo na i-tabli. Izkazalo se je, da se učitelji matematike zavedajo velikih možnosti i-table, vendar jih za zdaj premalo smiselno izkoriščajo. V članku razpravljamo tudi o vlogi učnega gradiva (v našem primeru i-gradiva za delo na i-tabli) pri razvoju matematičnih pojmov in vplivu na znanje učečih se. Članek končamo z napotki za ustvarjanje i-gradiv, ki smiselno in didaktično ustrezno vključujejo matematične reprezentacije.

Classification: U70 D40*Keywords:* mathematics lessons in elementary school; e-materials; mathematical representations of concepts; i-boards