The Textbook “Rita, Raitis and Numbers” by J. Mencis (Sen.) and D. Draviņa for the Pre-school Learners

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Abstract. The article presents the analyses of the textbook for the primary school children in math “Rita, Raitis and numbers” designed by J. Mencis (Sen.) and D. Draviņa who emphasize the importance of developing basic math notions for the primary school children as seen in the context of sustainable education. This is essential to recognize the importance of teaching basics that need to be developed at the primary stage of education in preparing children for school. The aim of the study is to offer a detailed study of methods offered by J. Mencis (Sen.) and D. Draviņa for pre-school children and its applicability nowadays. The authors offer suggestions about the most efficient approaches in teaching math for the primary school children. The book designed in 90’s is still efficient today. Therefore, the authors present a detailed analysis of the methods and contents of the school subject suggested by the scientist J. Mencis for the contemporary purposes in preparing children for schools. The authors have used a content analysis to study how the interests and the needs of girls and boys are being met in stories, revealed in the content of exercises and in the choice of hand-outs. Particular attention in this study has been paid to a representation of the role of family in preparing children for school, as well as to a gender dimension in the textbook. The main research problem is to reveal the suitability of the textbook for the purposes of a contemporary pupil. The aim of the study is to prove that the contribution of J. Mencis (Sen.) and D. Draviņa in teaching math is of national value and how it corresponds to the criteria of a contemporary textbook. The objectives of the study is to 1) explore gender portrayal in the book, 2) its suitability of us by the families in training the child for the schools, as well as 3) the plot of the textbook and it’s suitability for children. The book has been used
by several generations of teachers, it corresponds to the criteria required for the contemporary textbook in math, and can serve as bases for further use.

**Keywords:** basic notions in math, pre-school children, family representation, gender balance, sustainability perspective.

**Introduction**

The aim of the article is to explore a pedagogical value and a relevance of the textbook “Rita, Raitis and numbers” by J. Mencis (Sen) and D. Draviņa for the contemporary pre-school learners. The objectives of the study is to explore the gender dimension in the content of the book as well as books methodological appropriateness for its use by the parents.

The article begins with a summary of a relevant literature about the gender and family concept in the textbooks for preschool children. The authors focus on the methodology followed by the research, then description of data which has been coded and analysed.

Training of 5–6 years old children for school is compulsory in Latvia according to legislation. The preschool establishments undertake the responsibility to build the basic notions in math for children. The Primary School State’s Guidelines (2012) define the indicators which the child needs to meet to demonstrate when starting the school. These are the following: 1) to understand the connection that exists between number and figures, to be able to write numbers; 2) to understand the notion of the addition and subtraction, to be able to solve practical tasks, by counting till ten; 3) to recognize geometrical basic elements (dot, line, circle, triangle, and a square), 4) to understand logical sequence and to explain it; 5) to describe and to compare objects, as well as to group them according to the diverse features. As the national and international research indicates, children’s success in learning depends to a large degree from the family support (Parental Education and Cooperation project, 2013). The main players in pre-school education are women, serving the role of pre-school teachers and the authors of the textbooks; therefore the whole educational process in preschools, including the textbooks, is better suited for girls.

A number of researchers have written about training of children for school in the family. Several researchers have come to a conclusion that a preschool plays a significant role in training children for school (Bottle, & Godfrey, 2003; Aubrey et al., 2008; Anders et al., 2012).

The main forms for developing basics in math used by families, are games, stories that develop children’s imagination and foster processes of building associations (Anderson, Anderson, & Shapiro, 2005; Goral & Gnadinger, 2006; Casey, Erkut, Ceder & Young, 2007; Vandermaas-Peeler, Nelson, & Bumpass, 2007; Panhuizen & Elia, 2012; Drelinga, Iliško, & Krastiņa, 2011; Gerretson, Iliško, & Fortino, 2010).
Research results demonstrate that mathematical skills of children are closely connected with the cooperation of children and teachers. A close attention is being paid to such notions as size, comparison, selling, buying, by the use of addition and subtraction. Still, the authors admit that parents have no proper training to prepare the child for school. A number of researchers indicate that the best support to children is provided by their parents who have special training (Starkey & Klein, 2000). A family plays a significant role for preparing children for school. Research indicates that children who experience higher quality of parental support are more likely have a successful learning experience in the first grade (Stright, Gallagher & Kelley, 2008).

By the use of stories, textbooks develop children’s imagination by paying close respect to the needs of boys and girls. The authors of the textbooks pay a close attention to gender differences as represented in the textbook. Boys perceive the world in a rational way, but the girls by the use of imagination and metaphors (Higgins, 2001). The boys learn numbers by paying fewer efforts as compared to girls. The girls use imagination and fantasy more often. They use imagination for developing interrelationship that exists in nature by the use of visual aids. Stories help to build associations and to solve problem situations. This is essential to pay close attention to a representation of gender issues in the textbooks, since any stereotypical representation of gender roles influence children’s views on behaviour and roles of men and women. As this was stated by Subrahmanian (2005), stereotypical roles what men and women do in the activities and the roles their perform determine the opportunities in which they have success.

In 70s in Latvia J. Mencis saw the necessity to train children for school. He emphasized that the school does not use children’s potential to a large degree, therefore the school does not train the child properly for the school. Particular attention the scientists have paid to training of parents how to teach children.

In 1993 he has designed the book for parents and children: “Rita, Raitis and numbers” together with D. Draviņa. By reading this book together with their children, parents discuss with them diverse situations and learn math. The authors introduce methods and forms of learning math for parents that can be used for more interactive learning of math.

The other significant aspects as revealed in this study are representation of gender disparities in the textbook. As this has been argued, the message conveyed in the texts has a significant impact on values and beliefs of its readers, as well as on shaping children’s gender based attitudes (Patt & McBriede, 1993; Youdell, 2005). Several authors have emphasized that gender portrayal in the textbooks affect social values, behaviour and it has the potential influence on the development of children’s self-esteem and their attitude towards other sexes (Hunter & Chick, 2005; Elgar, 2004). A number of studies emphasize a quantitative imbalance in the appearance of man and women in the textbooks and women represented as having less importance. We also have examined which roles are designed for men and women in the book. If the type of activity was performed...
by the men only, it was classified as male dominated, and otherwise. If a social role was served by a women only, it was categorized as ‘female monopolized’ role.

The methods of the research

The main method of research was content analyses of the textbook, by doing and categorisation procedure (Geske & Grīnfelds, 2006). The coding and categorization of the main themes has been performed by two researchers. They are aware of a risk being objective in interpreting data.

The research describes the descriptive analyses of documents and their interpretation. In order to answer research questions, the authors chose the units of categorization and prepared coding instructions.

Research questions posed in the study are as following: How do authors make a selection of the plot of the story and the tasks in their book “Rita, Raitis and numbers” to make it more suitable for the families in order to engage preschool children in preparing them for school and developing basic notions in math?

1) Family members depicted in the books are grandfather, grandmother, father, older sister, and preschool children;
2) Description of family members – their features and life experience; 3) duties of family members in the family, works done; 4) “possibility to participate in developing basic notions in math”.

Are gender differences and balance criteria have been observed in the contents of the book?

Which content categories and strategies are more suitable for preschool children? There were the following categories that have been used in the book that are analysed in this article:

1) “Size”, 2) “geometrical forms”, 3) “number and addition”, 4) “orientations in space” and 5) “orientation in time.” As a result of a categorization process, the authors have singled out the sixth category: 6) “solving ‘nuts; (difficult tasks)”. 

Research findings

The educational context for teaching math

The most attention in the book “Rita Raitis and numbers” has been paid to learning numbers and learning to perform addition. The book offers children a number of real life situations that encourages children to learn math. The book provides parents with various methodologies how to help their children to develop basic notions about the numbers, to discover a connection that exists between the number and its notion and a symbol. The authors of the book have used children’s visual, audial, kinaesthetic and
tactile channels of perception: children listen, observe, touch and solve tasks. By solving everyday situations, children solve diverse tasks.

For the development of a notion of geometrical figures and forms as reflected in the book: “Rita Raitis and numbers”, the authors have paid less attention – 13% of all activities. Still, for the comparison of geometric figures, the authors of the book offer hand-outs. By development of other skills, children develop the notion of figures.

The authors of the book offer children opportunity to be involved in various situations, where children compare and measure different sizes – in 17% of all the activities. The authors invite parents to respect the age particularities of their children and invite parents to organize situations where children need to measure, for example, “How long is the pencil?” Children have learned the notion “less than” “more than.”

The book offers children tasks for developing children’s understanding about the tile in 7% of the book’s content activities. The tasks set for the preschool children in math are to teach children to count within 10. J. Mencis (Sen.) encourages teaching children also numbers 11 and 12. He explains that “this is enough to teach children to count till 12 and backwards, as well as to learn to write down those numbers, though this is not necessary to teach addition and subtraction” (Mencis, 1973). The book “Rita un Raitis, and numbers” teaches children to understand time together with their grandfather, by learning to count and to understand hours.

Together with the eldest sister Ildze, pre-schoolers draw and learn to understand the notion of direction “to right” and “to left”, to understand interrelatedness and to create rhythmical rows. For the purpose of learning orientation in space, the authors have designed 12% of all the tasks in the book.

As for the gender balance as represented in the book in the domestic sphere, both, men and women were depicted as serving traditionally assigned roles as a mother and a father, a daughter and a son. These roles are stereotypically portrayed in media. The pictures illustrating household activities reinforce traditional gender roles. Women are depicted in quitter, and in supporter roles in the family. Textbooks have lasting influence on pupils’ beliefs about gender roles, regarding the roles of men and women and influence learners understanding of social equality and gender equality in the society.

**Introduction to units and relatedness between the elements of units**

Learning basic skills in math is essential to be more efficient in today’s world (OSCD, 2010). Learning mathematics is effected by a number of variables and circumstances, like environment, teachers; competency, teaching approaches, and, finally textbooks, which play not the least part in the learning process. Teachers have competency how to teach content, how to organize lessons in a way that new notions are built on the old ones. Similarly, the chosen textbook is built on these didactical principles.
A significant part of J. Menci’s methods is devoted to “tough tasks” to solve which one needs ability to think, and to conclude. Such kind of tasks can be found in the text of the book.

**The plot of the textbook and its suitability for children**

J. Mencis addresses children’s parents: “*The success of the child in math depends not so much from his/her abilities but more from how the child adopts in the school’s environment.*” He suggests alternative learning: “*Any time and in any conditions tasks need to be related to telling the story, walking, and sitting in the park.*”

In the analyses of the plot offered in the book, more attention has been being paid to the plots related to plants (11 %), animals (13 %), plots related to children’s interests (38 %), the plot related to interests of boys (21 %), and (17 %) of plots related to the interests of girls. The evaluation of other books written for the preschool children, the number of tasks is related to the interests of boys much higher.

The research indicates that the methods offered by J. Mencis are contemporary because the author offers the methods appropriate for children, both girls and boys.

**The role of a family**

In the book “Rita, Raitis and numbers” J. Mencis and D. Draviņa reflect on a value of a strong Latvian family where Raitis and his little sister Rita are preparing for school. Raitis likes “constructors” and he likes “teasing his sister”. He likes to be “in the presence of his father”, to go fishing or to work in a garage; he likes to prompt his father the road signs. Rita likes “to play with dolls”, “to sing and to cite poems”. Since the book is written in 90s the authors presents a strict division between the type of games and activities that are more proper for the girls and for the boys.

Considering the differences between children, they are connected with strong ties of friendship and a motivation to learn something new. Raitis reads for Rita, and can answer her questions. Rita tells her brother about what she has seen. Children accept all the challenges. In cooperation with the family children learn skills that are necessary for life and school.

Grandmother also takes an active role in upbringing her grandchildren for school. She “knits, saws”, as well “boils the soup and bakes cakes” and performs the tasks stereotypically designed for women. Grandmother does not object to the presence of grandchildren because they bring joy in her life. Together with her grandchildren they “sing songs, solve puzzles and play games”. Together they learn “finger names”, “to gather
medical herbs”, and “to interpret dreams”. This, the authors of the book puts emphases on the intergenerational connectedness among the family members.

She helps children to develop math skills: when Rita needs to bring coal for a snowman, the grandmother asks: How many pieces of coal do you need?” The girl showed the number on her fingers. Grandmother does not create situations but is sharing her life experience; she undertakes a responsibility to repeat all the necessary skills for school in diverse contexts and situations.

A “clever grandfather” knows “not only how to find mushrooms but also tells that “storks bring luck” and that “the big oak tree was an acorn before”. Grandfather is sensitive and attentive.

When he has noticed that Rita does not like stories about wild animals, he pays more attention to the songs of the birds. He can listen and retell. Children learn about a clock and how to count time, learn the notion of a week, and months. The grandfather comes in the story with his wisdom, information about folk traditions and skills necessary for life.

Big sister Ildze is a good and an active pupil. She patiently explains her brother and the sister what is the task and what is the number. Ildze teaches children “the game about neighbours”, and teacher’s children “the game about numbers”, invites them to join to play the game “Strautins”. The one who is left without pair, runs in order to find a pair. Thus, children learn about even and uneven numbers. The girl teaches younger children. By organizing role plays, she helps to learn listening skills, concentration skills, and ability to think and to listen.

The mother is the one who helps children to solve interpersonal conflicts. She explains children such emotions as: “sadness” and “excitement”. Mother is singing herself and involves her children in singing.

Particular attention in the book is devoted to the father who can “repair the car”, and “make furniture”. When he tells about parachute jumping, he uses such terminology as “landing”, “technics of jumping” and “free jumping”. The explanations are precise and correct. The father is the one who is organizing trips and fishing. Together with children he discusses important questions related to math. He performs all the activities stereotypically assigned for males.

Each family member plays a significant role in training children for school. The plot of the book rarely reflects traditional learning situations when one teaches and the others learn in a specially assigned time and places. Such role plays are mostly organized by the older sister Ildze. Learning rarely takes place in specially designed situations when one needs to solve issues significant for children themselves.

By telling stories, children explain their actions, adults help them to create associations; encourage using imagination, to understand and to remember. The book offers situations which highlight each member’s individuality and creates the opportunity to use knowledge, skills and the attitude. The authors of the book emphasize the role of
each member’s contribution in training children for school. The learning process takes place by playing games and in their intergenerational interrelatedness.

The analyses of the plot of the book allow to conclude that J. Mencis has paid a close attention to the role of a family in training children for school. The methods offered by J. Mencis are contemporary, even nowadays.

**Recommendations for developing teachers’ awareness of gender portrayal aspects in the textbooks**

The study points the importance of choosing the proper textbook which is not gender biased and implies the involvement and cooperation of a family in teaching math to preschool children.

The proper representation of gender roles in the primary school textbooks fosters a movement towards gender equality in the society and education. Children gain information about the gender roles through the socialization process both in school and in the family, therefore the choice of the textbooks play a crucial role in challenging traditional gender roles in everyday situation. Textbooks and teaching materials transmit strong messages about the roles and duties men and women are supposed to perform.

By the use the textbooks as tools, teachers can develop analytical minds of their students, who will be able to recognize gender inequalities in the society. Innovative teaching practice and the textbooks can support gender equity and challenge gender stereotypes and biases. Equity education prepare both boys and girls to be productive and empowered citizens (Magno & Silova, 2007), as well as will provide an empowerment for girls to expand their capacities and opportunities. Textbooks shuld not contain discriminatory content and include skills that is needed to overcome bareers to gender equality.

Outgoing teacher training about gender sensitive teaching approaches and teaching materials would help teachers to build more gender equitable classroom interaction.

**Conclusions**

The book is written in a scientific, simple and comprehensive way. The article addresses the following questions:

Which content in teaching math has been offered by J. Mencis is advisable to learn before school, which methodological means can be used in this regards?

Has the author paid attention to the differences between girls and boys by the choice of plots and visual aids?

How does J. Mencis use the plots of the textbook and the task content to allow the family members to involve preschool children in preparing for school and developing basics in math?
Particular attention in the book has been paid to the role of a family for preparing children for school. The textbook does not sufficiently depict current reality in the family and family relatedness because today we can talk about the complexity of family concept with single parenthood, reconstituted families and other living arrangements. The author depicts the ideal of extended family where all family members are equally involved in training children for schools. They are united by close relations and warm intergenerational ties.

The authors of the textbook did pay a close attention to a diverse needs and interests of girls and boys who are potential readers of the book. Still, since the book was written in 90’s, there are specially assigned activities to the girls and the boys. There is a high awareness of avoiding gender stereotyping in the textbooks by presenting gender neutral design. In spite of positive developments there is much to be improved.

Still, pedagogical contribution of J. Mencis (Sen.) can be evaluated as having a national value that can be used in many generations and as bases for a further development. The book written by J. Mencis is advisable to use for preparing children for school by integrating some innovative family concepts and drawing a more blurred line between the activities designed for the girls and the boys. For the other studies to consider, the authors of the textbooks need to include texts describing women as inventors, scientists, heroes, so that women’s contribution in our society is not to be overlooked.

References


Santrauka


Esminiai žodžiai: pagrindinės matematikos sąvokos, ikimokyklinio amžiaus vaikai, šeimos vaidmuo, lyties balansas, darnumas.

Įteikta / Received 2015-01-19
Priimta / Accepted 2015-08-24