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TOMASZ KNOPIK

Maria Curie-Skłodowska University in Lublin, Poland
ORCID: https://orcid.org/0000-0001-5253-7545
tomasz.knopik@umcs.eu

Urszula Oszwa, *Lęk przed matematyką. Poglądy, badania, rozwiązania*, Wydawnictwo UMCS, Lublin 2020, pp. 274

FEAR OF MATHEMATICS COGNITIVELY TAMED. ABOUT A NEW MONOGRAPH BY URSZULA OSZWA

Pedagogues and educational psychologists dealing with difficulties in learning mathematics have been waiting for Urszula Oszwa's new book for quite a long time, however, with unwavering curiosity and hope for another portion of reliable knowledge and practical inspirations for working with students. I am sure that they will not feel disappointed when they pick up a very neatly written monograph, this time devoted to the emotional side of mathematics education, specifically the fear of mathematics. The author stresses the importance of the discussed topic in many places: on the one hand, the interest of educators in stimulating motivation for STEM education (due to the social importance of this field of study), on the other hand, too narrow perception (especially in Poland) of mathematical difficulties as conditioned mainly by cognitive factors without taking into account the role of affect. This, by the way, is an extremely interesting theme of the stereotypical understanding of mathematics as an extremely rational discipline that does not make space for emotions. Oszwa returns to this issue several times in the pages of her monograph, convincing us that the order of reason and heart seems to coexist in mathematics. I believe that Blaise Pascal would certainly have agreed with her, and even considered that the claim about the rational-affective character of mathematical procedure did not require any bet.

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The publication has a clear structure, which logically organizes the process of argument: from the presentation of theoretical views on the nature of fear of mathematics, through a review of empirical research conducted on the ground of social sciences to recommendations for education and therapeutic-development activities. Each chapter ends with a summary, in which the reader has access to the key issues discussed in a given part of the text, which makes it easier for him/her to face the next piece of information – he/she smoothly enters a new issue prepared by the author.

The main threads in the area of ongoing research in the world and in Poland were superbly presented, which the author described in the form of five key issues:

- the relationship between fear of mathematics and achievement,
- the role of cognitive and motivational processes in the formation of fear of mathematics,
- socio-demographic variation in fear of mathematics,
- the neurobiological paradigm,
- measurement of emotions related to mathematics.

In addition to the competent reporting of research results, this part of the monograph contains what every meta-analysis (although the author does not explicitly use this research methodology) should provide: a critical synthesis of the researchers' approaches and conclusions from the comparisons made. In these authorial summaries, the reader can recognise Oszwa's unique talent for disciplined analyses of scientific texts (with sensitivity to the terms used) and for creating, on their basis, specific mind maps organising researchers' discussions. This is probably the reason why there are so many diagrams, infographics and tables in the book – they give a better insight into the author's narrative and at the same time summarise the more extensive parts of the text.

I feel somewhat unsatisfied with the third part of the monograph, which contains solutions for education. It is only 25 pages long and, in my opinion, it would be worth reinforcing it with a review of exemplary methodological strategies modelling the implementation of the described recommendations coming from research and scientific analyses. An infographic presenting the transfer of views and research findings into educational preventive and therapeutic solutions can be seen as particularly inspiring for Oszwa's own programme to support the reduction of fear of mathematics (p. 243). It is a pity that the author did not take the next step... On the other hand, however, scientific monographs must adhere to a certain discipline of basic research and should not look too much like teaching guides. In this context, therefore, I understand the author's cautiousness in providing practical ways to implement the formulated theoretical postulates.

The author's writing skills are excellent: not only do the chapters read well, thanks to a natural inclination to discuss complex scientific arguments in simple language (without exaggerated pomp and dictatorship of scientific jargon), but also to apply a strategy which, for the purposes of this review, I would call "WRUP!" – *Wyjaśnij!*

Rozwiń! Utrwal! Podsumuj! [Explain! Expand! Sustain! Summarise!]. This way of writing is an expression of concern for the reader's learning process, so that reading the monograph actually leaves a lasting mark on the memory. What we are faced with, therefore, is the attitude of a scientist who is concerned, in the publications she gives to the world, to create a space for genuine knowledge of the discussed phenomenon, and not just to write a report on her own research and discoveries.

As a psychologist, I am particularly impressed by the chapter on stereotype threat in mathematics education. The author has taken a very close look at this issue and has developed the most comprehensive approach to it in Poland. We will, therefore, find in this section analyses of research findings in relation to both stereotypes of gender, age, SES status and intergenerational transmission. A wealth of knowledge about the social nature of fear of mathematics – an obligatory reading for every teacher who is close to the attitude of a reflective practitioner. It is worth learning about the complex mechanisms of shaping students' beliefs about coping with mathematics described by Oszwa in order to more skilfully create teaching situations that foster the development of both mathematical competence and resilience resources. However, I do not share the author's such an optimistic view expressed in the third part of the book that "only the right environment – an inclusive one in which all students are equally important – is needed to develop mathematical resilience" (p. 234). The use of the word "only" in this context should probably be taken as an expression of irony, since building a truly inclusive educational space is a challenge at a more ambitious level than living on Mars (as Musk wants). For the time being, Musk is closer to living on a red planet than Polish schools are to achieving the inclusion standard. But changes in the pragmatics of learning – teaching will not be possible without such inspiration from science as provided by Urszula Oszwa's monograph.

Fear of mathematics cognitively tamed. Time for action.