

The Henry Pollak Award

Greetings from Henry O. Pollak

at the Award Ceremony at ICTMA20, Würzburg (27.09.2022)

It is a particular pleasure for me to introduce the awards for Werner Blum, Mogens Niss, and Peter Galbraith. I have learned so much from them and their students in recent years.

Werner has introduced me to many aspects of the cycle from the original situation to the mathematical model and then back to the original situation and the verification of the model. One aspect of this which I have learned is that students do not do this in only one direction, but go back and forth many times. I had not realized this. When I learned this, I examined what I did myself, and discovered that I myself went back and forth many times. I just had not noticed it, and nobody until Werner had told me to look for it. A welcome step forward.

Mogens Niss told me that there were two different types of modeling, descriptive modeling and prescriptive modeling. Initially I found this distinction difficult. As you all know, descriptive modeling takes a situation outside of mathematics, idealizes it, mathematizes it and then you check whether you have succeeded. As I had learned from Blum, the “and then” is not true, it may go back and forth many times. But as Niss taught me, you may wish to design a structure to have certain properties you desire – can you or can’t you? Most educational are some of Niss’ favorite examples: How do you want to define body index, and how should income inequality be described? I also find it especially interesting, and perhaps a throwback to my earlier habits, to see if a particular property is or is not achievable. But earlier habits are hard to give up, and prescriptive modeling is an especially valuable point of view.

In my life I went through many stages, from pure mathematics to mathematics in industry, to rethinking of school mathematics and then of tertiary mathematics, and finally to teacher education. Nothing was more inspiring and valuable than **Peter Galbraith’s** work on the conflicting purposes of traditional mathematics education and of mathematical modeling. What is each of them for? Are they conflicting or do they support each other? Read Peter’s examples, and think about them, and then read them again! They are enormously valuable. How can modeling and traditional education be tailored to support each other and not be in conflict? And what do employers want? Do they know? They are not only employers, but also parents. Read Peter Galbraith.

So, thank you Werner and Mogens and Peter for your wonderful work.



(the medal, front set and back)