

Twitter Thread by George Stone



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What do you think your students might draw if you asked them to draw a mathematician? What if you asked them why someone would hire a mathematician?

This study asked exactly that to 470 year 8's across 5 countries. The results are depressing. But also hilarious.

Thread...

1/n

SUSAN H. PICKER and JOHN S. BERRY

INVESTIGATING PUPILS' IMAGES OF MATHEMATICIANS

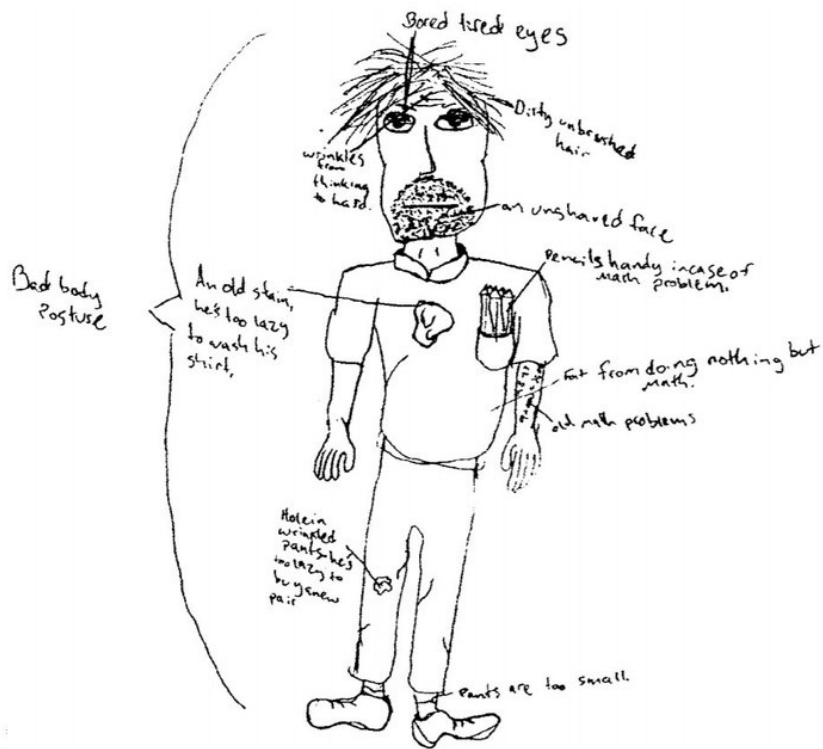
ABSTRACT. This paper describes a research project that had two goals: (1) to design and develop a tool with which to investigate pupils' images of mathematicians; and (2) to use the device to compare those images held by lower secondary pupils (ages 12–13) in five countries. We report that with small cultural differences certain stereotypical images of mathematicians are common to pupils in all of these countries and these images indicate that for pupils of this age mathematicians and the work that they do are, for all practical purposes, invisible.

KEY WORDS: draw a mathematician, pupils' images of mathematicians

Here are some of their drawings:

"an old stain, he's too lazy to wash his shirt" "fat from doing nothing but maths".

2/n

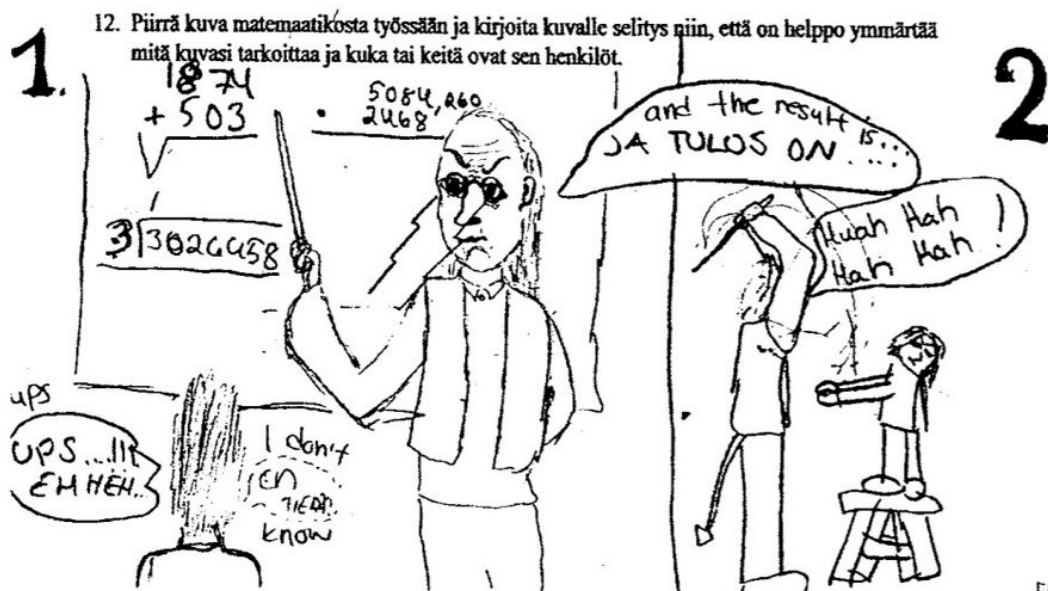


This student drew a mathematician that is apparently a devil teacher...

3/n

INVESTIGATING PUPILS' IMAGES OF MATHEMATICIANS

75



F57

Figure 2. Finland – Female pupil.

This is umm... concerning

4/n

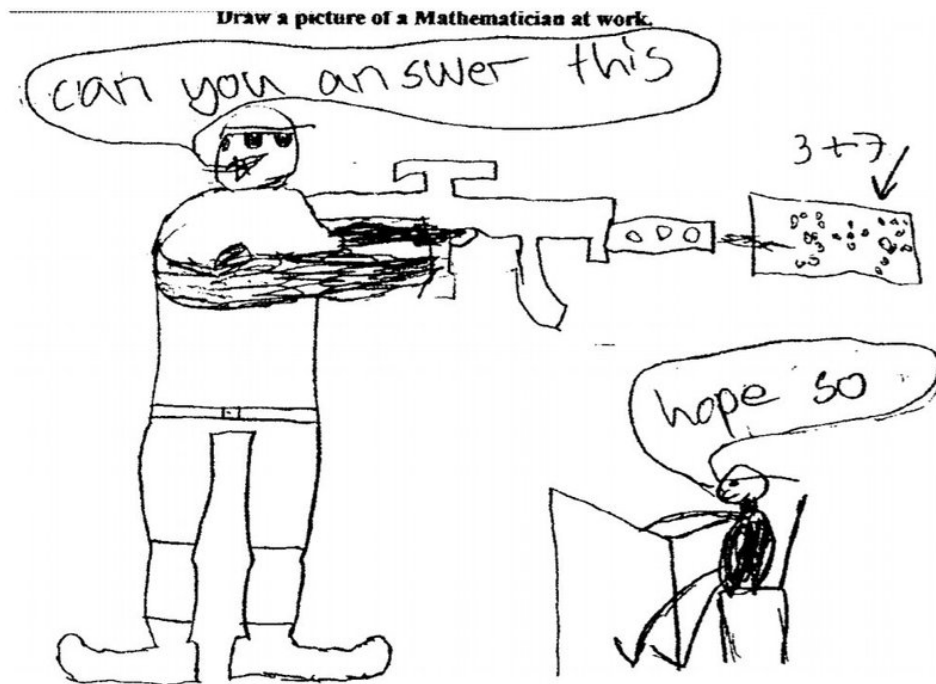


Figure 4. Sweden – male pupil.

"You should all know this"

5/n

78

SUSAN H. PICKER AND JOHN S. BERRY



$$X + Y^2 \times 2,2000 \div 1^2 \times 2^2 \times 3^2 \times 4 \times 1000$$

Figure 5. U.S. – female pupil.

I think this drawing is a role reversal...

6/n

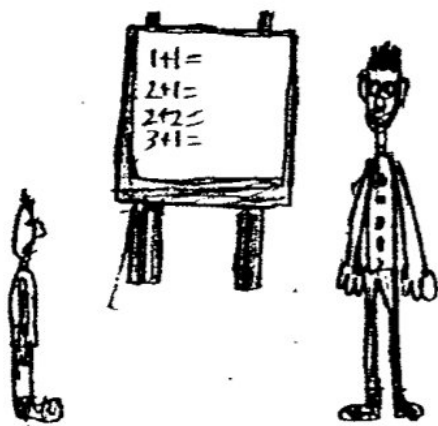


Figure 3. Finland – male pupil.

"A mathematician reduced to teach in pre-school"

Don't forget these students were asked to draw a mathematician not to draw a maths teacher.

7/n



MATEMAATIKKO
ALENNETTU
ESIKOULUN OPETTAJAKSI

a mathematician
reduced (lowered)
to teach in pre-school

1/1/02

Figure 10. Finland – male pupil.

Now the depressing parts. The gender difference is striking. These are year 8 children and their image of a mathematician is overwhelmingly male.

TABLE III

By country: Gender in pupils' drawings, by percent

COUNTRY	Males drawing males/%	Males drawing females/%	Females drawing males/%	Females drawing females/%
USA	93.8	3.1	61	30.5
UK	93.8	6.3	41.2	56.9
Finland	86.4	0	52.0	20.0
Sweden	100	0	79.1	20.1
Romania	100	0	75.0	16.7

One female student drew a female and wrote "I drew a woman mathematician because there seems to be only men mathematicians and I wanted to depict a woman doing the work a man usually does. My drawing is of no particular person"

9/n

The study was conducted in 2000 and the authors suggest that the reason the UK children drew the most female mathematicians was because of the prominence of Carol Vorderman on Countdown.

10/n

Then students were asked "If you have a leaky tap or faucet, you need to hire a plumber; if you break your leg, you need the services of a doctor. List below all the reasons you can think of for which someone would need to hire a mathematician:"

11/n

While there were many reasonable answers (see table below), others included "no one would be as stupid to hire mathematician" and "He will do my homework and go to school in my place" and "I don't know".

12/n

TABLE II

By country: top four reasons given by pupils for why a mathematician would be hired

USA	UK	Finland	Sweden	Romania
Teaching (57)	Accounting (31)	Teaching (20)	Teaching (8)	Teaching (16)
Accounting (26)	Teaching (26)	Building (8)	Building (4)	Problem solving (4)
Architecture (24)	Banking (22)	Banking (4)	Navigation (4)	
Area/perimeter (17)	Programming (10)	Programming (2) (2)	To do bills (3)	

It was clear that the students in the study didn't actually know what a mathematician was or what they did. "As our analysis proceeded, we came to conclude that as far pupils of this age are concerned, mathematicians are essentially invisible"

13/n

How often do we really tell our students what mathematicians do? Do they know that maths has many open & unsolved problems? How do we represent mathematicians? Why would so many students draw maths teachers as such authoritative or such foolish characters?

14/n

Interesting to reflect on these points as maths teachers, mathematicians and members of society as a whole.

Read the full paper here <https://t.co/Oiwa7dISCu>

15/15.