What gains a mathematics teacher from a Symposium like Puzzle

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The mathematics teacher obligation

It is a human right to have access to information.

A mathematics teacher has the obligation

to make the information

accessible to students.

Content

- Who are your students?
- What do you want to inform your students about?
- Why do you want to say this to your students?
- What do your students already know about this subject?
- Are your students interested in knowing this?
- When will your students get this information?
- How will your students get this information?

Content answers - 1

- Who are your students?

- Boys and girls either

in the lower secondary education

or in the upper secondary education.

Content answers - 2

- What do you want to inform your students about?

- In every teaching hour about mathematics

  according to curriculum directives

- curriculum = courses approved by the government
- directives = rules

Content answers - 3

- Why do you want to say this to your students?

- Because that is my job.

  I am a teacher.

- What do your students already know about this subject?

- Sometimes my students know a lot.

  Sometimes a little bit.

  Sometimes almost nothing.

Content answers - 4

- Are your students interested in knowing this?

- Not all of them, not all the time.

- When will your students get this information?

- During the teaching hour.

Content answers - 4

- How will your students get this information?

- By hearing me talking,
- seeing me writing
- and doing things on the blackboard
- and by doing themselves certain activities under my supervision.

Language - 1

- In the classroom

  during the teaching hour

  I speak to my students and

  I write on the blackboard.

Language - 2

- I use spoken language and written language.
- The spoken language must be easy to understand.
- The written language as well.

Language - 3

- Mathematics avoids

  using the same words or symbols

  for the same things.

  Synonyms are avoided.

- Mathematics avoids

  words with double meaning.

- There are exceptions

  but fortunately they are rare.

Language - 4

- Mathematics uses expressions

  either in written or in spoken language.
- Expressions have a natural meaning

  but also a defined meaning.
- Expressions are probably

  the first difficult mathematical being.

Language - 5

- The product 3X3X3X3X3X3X3 can be written 3^7.
- An expression is being born :

  We read the symbol 3^7 as "three power seven".

  If a product has only one factor

  then write that factor once

  and high to its right

  write the number of times

  the factor appears in the product.

  This is the natural meaning.

Language - 6

- But there are cases where

  we write 3^{-7}.

  The natural meaning is lost.

  We have to define the meaning.
- Most probably here lies

  one of the difficulties

  of mathematics

Language - 7

- I note as well that writing 3^7 is an abbreviation.

  The bad news is that

  mathematics cannot avoid

  expressions and abbreviations.

  The good news is that

  the abbreviations and expressions

  are unambiguous.

Layout

- The teacher should produce

  texts on the blackboard

  or on paper

  that have to be well organised

  and easy to understand.

Pictures

- In mathematics we use

  as much as we can

  drawings, diagrams etc

  that is visual material

  in order to make

  our texts readable and understandle.

Mathematics teacher gain from Puzzle

- To make your work productive

  implement algoritms.

  The simplest form

  of an algorithm

  is a check list of questions

  and their answers

  aiming at passing on

  the information successfully.

THE (HAPPY) END

THANK YOU

FOR

YOUR ATTENTION

AND PATIENCE