
Understanding

* It is Sunday 1st of Dec. Unusually, the 'Stabi' is full. 'stuffing'??) is the norm. This has nothing to do with understanding.

What do such (this includes most) students get from the system? At best a poor body of simplistic knowledge, and a poor body of methods (algorithms to follow), that is, again, more poor mindless knowledge. Why is the difference between thinking and knowledge never made explicit? As we can see, they never get thinking out of it, but the reverse, because of methods that work on tests, and even sometimes outside tests. So in all these years, they learn how not to think. This is a disaster.

* <rel. trick and method> On the proof-lake level, that is, the lake which classifies truths based on the methods that are available of solving them (of course a rich structure), we get a better understanding of trick/method and of disciplines which 'lack general method' but become a large collection of special results. We already thought about 'an infinity of different descriptions what comparing 'algebras' to R (notes on paper). A method is a tag in the proof-lake, that applies to a number of proofs, if a topic happens to need only a small number of methods, then it is seen as 'nice', while in a field with such a variety of methods (almost one method per proof, that is no common tags linking the methods), we feel disorder. Logically there is no reason why any should be the case. A topic itself is a classification, and all combinations of 'topic' and 'variation in number of needed methods' exist. In other words, combinations of 'choice of creatures', and (up to now) number of different methods needed to tag them, that is 'relations'.

* <rel. dialectical mathematics> In a paper note, we noticed that the dialectical method loses its potency when applied to quantitative questions, such as the exact determination of the Taylor expansion coefficients; the symbolic manipulation (transformation, re-expression) takes the upper hand. Upon further thinking, the situation is not that 'hopeless'. In such a situation the dialectical method is applied while devising the method by which the quantities are to be determined. Per example by a dialectical examination of the determining relations between the creatures involved, arriving to the idea to be applied symbolically that fixes and resolves those relations. This is the answer to the long standing problem of the illusory necessity of pure symbolic manipulation. It is true that the relations involved, when dialectically not sufficiently known, can be helped to surface by symbolic 'tatonnement'. Hence the symbolic manipulation takes two functions. The aid of the dialectical understanding of determination relationships at a preliminary stage if needed, and at the final stage of applying the dialectically produced idea with perfect precision, in the detail language of symbols. Note that dialectical is not necessarily confined to the 'mind', that is, never with the help of paper. Paper can be used, when the working memory is limited compared to what is required by the problem, and given a lack of a complexity reduction for the problem at hand (lemmas, hierarchical concepts, etc.)

* With the help of Lakatos, we also more clearly understand the strange-feeling situation during the boot-up (first sections) of an axiomatic approach to numbers. The axioms are what replaces having to assume what is 'obvious', but by proof-generated concepts of the history of the whole theory, they are not the 'obvious' axioms one would readily come up with, in short, they are proof-generated. Hence one fights with having to suppress the naive obvious, and 'prove' using the 'refined' obvious, not knowing why.
