

Re: Classical and Modern mathematics and (over?)specialization.

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- *From:* Bacle <bacle@xxxxxxxxxx>
 - *Date:* Tue, 23 Jun 2009 01:52:46 EDT
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On Jun 22, 1:21 pm, Bacle <ba...@xxxxxxxxxx> wrote:

Hi:

As a first-year student, I was surprised to see

the

degree of (what I thought was) > over-specialization in many students.

snip

Still, I see people who get their

degrees in , e.g., algebra in two years, but do not know what an open set is , nor the

definition of a Cauchy sequence, let alone basic results/defs.

related to them, like the intersection of open

sets

being open, or that a space is complete if all Cauchy seqs. converge

Are you referring to an undergraduate program, a Masters program, or a PhD program?

A PhD program; actually , to people from about 3 different programs. I cannot guarantee that these people are representative of their programs, tho I can tell you that I did not preselect them for any special trait.

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Is this a good thing (to be fair, these
people do know their areas of specialty
extremely
well)?

On what do you base your conclusion? That they know
what button on the
computer to push, that they seem to know a lot of
fancy jargon,...?

Well, there are many events that led me to think this
I am interested in all topics, and I am willing to talk
and ask and answer questions in all areas. I have
felt pretty lonely in this respect, and I have had the
impression that most are satisfied with a solution that works, even if it does not seem satisfactory
and/or is not well understood.

I grant you that this is an impression of mine
and that I have no hard data. I think that I am
representing it in this way: an impression I have,
that I have formed over a few years (even if this is
my 1st year, I have taken classes for credit, and
I have been hanging out with other PHD students),
and seeing if others agree with me.

Let me give you some concrete examples of
what I have found :

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a conversation about topology in which a student that
had graduated from the program , could not even
get a general picture of what we were talking about
(contractible spaces and retracts), could not
absorb the fact that in talking about open sets, etc.
we were not considering any algebraic aspect associated with these spaces (homology had not been
brought up). He did not know what an open set was,
nor what a topological space was. Then I would ask
some set-theorists about issues of platonism, etc.
(I am no specialist, but interested in it), and they
would pooh-pooh my questions, as saying: who cares?.
Then I would meet people who were doing proofs
about Lie groups , and would answer a question using
commutative diagrams that provided a "quick and
dirty" answer, and would dismiss followup questions

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on the grounds, I had the impression, that there was already an answer, so no need to keep digging.

I do remember in particular, when I became obsessed with understanding the meaning of the symbols, dx, dy , etc.; differentials. I did some out-of-class reading, and tried to tell others what I had come up with, hoping for some feedback. With the exception of one or two people, others just did not seem interested they were not able to give me an explanation themselves (I tried to ask the question when people were talking about related topics. I posed this one on differentials to some people who were discussing the chain rule in calculus and in general).

Again, I am stating an impression I have had and I am wondering if others agree; I don't claim to have a tight case to make. It is more of an inquiry and exploration than a declaration, since I don't have enough material to claim that it is more than an opinion.

I have been told that this trend is more of a modern trend, where much of the subject is "black-boxed", and the details don't matter, only the overall larger result, and what can be proven with it

Who told you this? A math prof, grad student, or is this just a notion you think you've discerned?

It has been a couple of older students and older professors, who claimed that with axiomatization, much of the subject had been "black-boxed". Some actually thought it was not such a bad thing.

I'm not trying to be combative, but you're saying things which in and of themselves are worth examining and questioning.

No problem, it is a legitimate question. But remember that this is at this point more of an inquiry/exploration than a declaration. Not that

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this frees me from having to make a good case,
but it does lower my burden of proof and/or the
burden of providing a good argument.

For the sake of reference, the schools I am
referring to are reasonably competitive.

HTH,
M

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