

Interview with Ulf P. Lundgren

In the following interview, which took place in February 2008, Svein Kvalø talks to Ulf P. Lundgren about the relationship between the practitioners within education and the didactical researchers.

Ulf P. Lundgren is a professor of pedagogy and he has, among other things, been the head of Stockholm University Teacher Training and director general of the Swedish National Agency for Education. He is now the secretary general of the Swedish Research Council's Committee on Educational Sciences. His main area of research is curriculum theory.

My answers are personal in the sense that they are built on my own experience. Unfortunately I don't have the capacity to be an oracle.

How can didactical research in mathematics reach the math teachers in school? What do you think might be of interest to teachers in this context?

*One requirement is that the job of being a teacher may be professionalized, i.e. evidently based on science and tested experience. This implies that teacher training must be formed into a straightforward vocational training. Another requirement is the teachers' continual opportunities for further education and also participation in research into the didactics of their subjects. A third requirement is the availability of professional journals and the existence national centres of documentation. The quarterly *Nämnamn* in Sweden is a good example of a professional journal. The mathematics biennial is an excellent example of dissemination of knowledge.*

What do you imply in the statement that school has a technocratic way of looking at research?

There is a figure of thought which I think is often dominating and which is built on the notion that research can provide answers to concrete everyday questions. Teaching is a complex process which implies continuously having to adopt new positions. What research can provide is perspective, explanations and understanding but no detailed procedures. If there is one thing that the latest century of experience has taught us, it is that there is no one golden method.

Can you elaborate on how teacher trainees will benefit from an understanding of school development in their math teaching?

A very important principle in teacher training as well as school education is giving the various areas of knowledge a historical perspective. Why did a certain area of knowledge arise? What was the problem? And what does that knowledge imply today? In the Swedish national curriculum it is said that in each subject a historical perspective should be included, a perspective which in reality is almost non-existent. What different view on mathematics would not children get if they had the possibility of following how for example geometry was developed and what that knowledge has made possible? Or derivatives? Or...?

How can teacher training be made less sensitive to trends?

I think the answer lies in what was previously mentioned: An education built on science and tested experience and including critical-methodical schooling is the best vaccination against trends and the golden method.

What arenas do you think are the most important when it comes to building bridges between mathematical-didactical research and the world of schools?

I refer to my previous answer.

What do you imply in the term mathematics-didactics?

To me mathematics-didactics is the knowledge that answers the three classical questions within curriculum theory and with an emphasis on the third.

- 1. What should be selected for learning and why?*
- 2. How should this selection be organised and sequenced for learning?*
- 3. How should the teaching itself be planned, carried out and evaluated?*

Shouldn't the teacher trainee be given the possibility to do some research during a master programme in mathematics-didactics?

Absolutely.

How should one make mathematics-didactics research results more available to math teachers in school?

I refer to my previous answer.

How can problem-solving methods become a larger part of math teaching?

I lack the competence to express an opinion on that.

Are you of the opinion that mathematics-didactics researchers write for each other and not for teachers?

I have no opinion apart from saying that in all research, communication has to entail communicating with colleagues and users.

Don't you think that what researchers write should be accessible to teachers in school?

Not necessarily in the first instance. Research articles should be written to advance research. What is often missing is its subsequent rewriting for other recipient than one's own research colleagues. What is generally missing is good science journalism.

Wouldn't it have been a good idea if researchers in mathematics-didactics taught in school for example for half a year every five years?

That may be one possibility. Another one is that they might work in a strong international research environment every five years. A third possibility is giving teachers the opportunity to take part in research and research environments.

We know of a teacher in Sweden who has his employment divided between school and the Umeå University. His own pupils constitute the basis for his research. How common is such divided employment in Sweden? Is this a good way of building bridges between research and the school world?

I hope and believe that there will be more such employment. At present the Government is launching a 500.000.000 SEK investment in giving teachers the opportunity to go through a researcher education towards a "licentiatexamen" degree (a sort of middle exam in a researcher education) in the course of three years. Hopefully many will continue towards a doctoral exam. The important next step is to direct employment towards the school system where this new competence can be safeguarded.