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From Novice to Professional: Teachers for the 21st century and how they learn their job.
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How can teachers become professionals and what is essential in teacher education to prepare students for the challenges of the future? Some of the teachers we educate today might well be teaching into the 22nd century – how can teacher education take this fact into account?

I will first throw a glance at the challenges ahead and, considering these, try to point out which consequences we should draw for the teaching profession.

Second, I will deal with the concept of profession, what is meant by it in professionalism research, what the core tasks of a profession are, which competences professionals need to develop and what this means for the teaching profession.

In a third step I will take a look at expertise research and what we can learn from the abundant studies on expert performance for the making of an expert teacher.

Finally, I will try to summarize my ideas and draw a few conclusions on how to re-think teacher education against this background and which measures should be taken to make teacher education fit for the future.

1. The challenges ahead: which consequences should we draw for the teaching profession. What are the challenges ahead?

Western societies are presently concerned with a number of challenges, among them sustainable economic growth for the well being of all members of society. They also have to come to terms with profound social changes and in order to deal with these changes have to support the advancement of active citizenship. Furthermore, people must learn to deal with cultural diversity and that it has to be seen as a resource and not as a problem. Schooling for all, and high-quality schooling could be one way of dealing with these issues. To impart key competences to our young seems to be an urgent matter. For all these claims and aspirations, lifelong learning, finally, is a concept we will have to integrate into our ways of life.

All in all, we are experiencing a social and economic transformation, which in many cases it is not yet possible to grasp in all its dimensions. This is crucial for education and for education systems. How can we plan education programmes, how can we plan to develop schools, how can we design teacher education curricula for a yet unknown but not too distant future? The European Framework of Key Competences defines the threshold value for knowledge, skills and

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attitudes that every pupil should have acquired by the end of compulsory school attendance in order to be able to participate in our knowledge-based society. The transversal nature of these key competences requires a high level of daily cooperation from teachers as well as a didactic concept that crosses the conventional subject boundaries in order to foster the development of these comprehensive competences.

We know from numerous studies, most recently John Hattie's findings after re-examining more than 800 relevant research studies (cf. Hattie 2009), that high-quality teaching is directly connected to pupils' learning success. Teachers do make a difference - they are most relevant for the learning processes of pupils. This sounds self-evident, but was not always regarded as so obvious as it has now been shown to be. What are the decisive questions to ask?

Two of the most decisive questions are what teachers should know and be able to do in order to best meet the challenges of their profession. And consequently, how they can best learn what they should know and be able to do. The challenges mentioned challenge teachers in their profession and in their professionalism. Before we go more deeply into the two questions mentioned I would like to first shed some light on what the core tasks of professions are under the perspective of professionalism research and what they have in common with the teaching profession. We will therefore take a short look at what professions in general are about, and why and what for professions are needed.

2. About professions in general and the teaching profession in particular

"The idea of a 'profession'" Shulman writes in a 1998 article, "describes a special set of circumstances for deep understanding, complex practice, ethical conduct, and higher-order learning, circumstances that define the complexity of the enterprise and explain the difficulties of prescribing both policies and curriculum in this area." (Shulman 2004, p. 529)

Professions emerge in domains in society which are *highly significant* for social stability and economic continuity. Accordingly, a core task of professions that seems to be irreplaceable in any type of society is to successfully deal with real or potential areas of crises of that society or culture – such as the legal and the medical systems. Today, in the so-called knowledge society, the education system must also be regarded as such a highly sensitive area when it comes to *safeguarding social cohesion and development*. "The core meaning of a profession," according to Shulman in the above mentioned article, "is the organized practice of complex knowledge and skills in the service of others." (Shulman 2004, p. 530)

Against this background, professions including the teaching profession have a *mediating task* between collective and individual interests (cf. Stichweh 1992; Oevermann 1996; 2008; Kanes 2012). Teachers, for example, are expected to teach the young in order to make them valuable

members of society. At the same time, they should also make sure that each child is perceived as an individual with his or her particular interests and talents. So, while trying to meet collective demands, teachers are also expected to respect the individual student in his or her own right. The mediating task reflects a *dual commitment* to both society as a whole and to the individual client the professional usually has to take care of – be it in a medical, legal or education context (cf. Stichweh 1996). Professionals work in *uncertain situations* in which the judgment of the individual situation is more important than routine or technical solutions. One focus of professionalism, therefore, lies on its *dynamic* and *dialectic* structure. Professionals are supposed to develop a *dual commitment* to both their clients and the society as a whole. For this they need to acquire *a solid body of research validated knowledge* from which they can draw their action plans which they are supposed to assess against the background of the demands of the specific situation. The latter, i.e. the demands of the specific situation, can only become evident to them through a *receptive attitude* which helps them to be open to what the individual situation, the "case" has to tell them (cf. Schrittesser 2013).

The consequences are the following: Due to the significance of the task professionals need a *sound theoretical knowledge base*. "Professions legitimate their work by reference to research and *theories* [author's emphasis]*." (Shulman 2004, p. 531) They have an *official mandate* which makes sure that not any one and every one can call him- or herself a teacher, a lawyer or a doctor. The significance of the task also leads to the necessity that a professional be committed to a manifest *code of ethics and conduct* linked with an attitude of responsibility which refers to a set of values on the basis of which professionals act *in good practice*. Finally, they are supposed to see themselves as members of an *occupational group* who shares the same vision and responsibility and who is also prepared to monitor and evaluate the quality of their work. I will come back to this aspect later on. *Autonomy*, in turn, is essential because their *judgments* have to be made in the best interest of their clients. Professionals must therefore be as free as possible from bureaucratic restraints. They usually undergo a long academic training and clinical phases and only after being successful in both will get a licence, an official mandate for his or her expert field.

A theoretical approach which very consistently analyses this interplay between the judgment of the individual case and the collective mandate along which professionals have to act and which seems to be very useful to analyse the *"grammar" of professional activity*, has been developed by Anthony Giddens (1984) in his theory of structuration. Giddens suggests, human agency and social structure are in relationship with each other. It is the repetition of the acts of individual agents which creates and recreates social structure. He calls this the duality of structure and the

dialectical interplay of structure and agency. This means that there is a social structure – traditions, institutions, moral codes and established ways of doing things. However, these can be changed when people start to ignore them, replace them, or reproduce them in different ways. Structural properties are at the same time constraining and enabling media of action while social agents produce and reproduce these structural properties and modify them by doing so. (Cf. Giddens 1984,pp. 17ff.)

Giddens' theory is used in a model of teacher competences that goes in line with the general assumptions on and criteria for professional work defined so far and at the same time is supposed to be specifically compatible with the challenges teachers are presently faced with.

It is a model that was developed by an Austrian group of researchers, experts and practitioners in order to view teacher professionalism in an international context and on the basis of more and more international requirements (cf. EPIK 2007). I was part of this group. As mentioned above, the concept we developed is based on Giddens' approach of structure and agency for each domain of competences refers to individual competences on the one hand and structural requirements on the other.

The *ability to reflect and discourse* needs to be cited as the first area of competence which we addressed in our project. In particular the ability to reflect, or reflexivity – the "reflective practitioner" (Schön 1983) has become a leitmotif in the debate on professionalism. It refers to both the ability to take critical distance to one's own actions in order to question their effects as well as to develop openness for dialogue with colleagues and to learn to analyse one's action from different points of view. Hence the ability to discourse is closely linked to reflexivity, because reflection is impossible without the discursive confrontation with resulting questions. Being able to discourse means to develop a differentiated professional jargon, to foster a methodically sound terminology and a targeted approach to pedagogic questions and problems. (cf. Paseka & Schrittesser 2012)

The second field of competence refers to *professional awareness* and that teachers perceive themselves as experts. Teachers are public persons and have a "public responsibility" (cf. also Terhart, 2002, 101f., among others). Professional teachers can be expected to participate in the public discourse on education and on school as experts, to take a stand and advance enlightenment. On the other hand it is also necessary to be "aware of limits" (ib.) and differentiate between person and role (Oevermann, 1996, p. 86). This implies not only to be aware of one's role, its functions and tasks but also its limits – not to act as a "full person" and rely on closeness and friendliness, for example, when professional distance is required. Hence it is equally important to reject excessive demands, which cannot seriously be fulfilled. It means

therefore to accept the public assignment the teaching profession has to fulfil and fill it with life. In order to be able to fully live this domain beneficial organisational structures are needed which foster professional development and offer options for a career.

As a third area of competence we determined *collegiality and cooperation*. Innovative organisation formats need to be developed which foster collegiality in the sense of a *professional (learning) community* (cf., among others, Bonsen & Rolff, 2006; Schrittesser, 2004) and offer a place where profession oriented knowledge can be deepened and expanded through dialogue. Results of various relevant studies overwhelmingly agree not only on the relieving influence of co-operations on the individual teacher, but also on the significantly positive effect on the pupils' performance (cf. the 2nd issue of the German *Zeitschrift für Pädagogik*, 2006, which is dedicated to this subject). In addition, a professional community could become the place to provide the appropriate context for fulfilling one's obligation to publicly argue professionalised behaviour.

Fourth, the *ability to differentiate* refers to the competence to meet pupils' various paces and learning styles as well as their range of different interests and readiness to learn and perform empathetically, attentively and with knowhow. The ability to differentiate also means being able to take the variety of cultures represented in school classes – including the gender cultures – but also the various demands of pupils with special needs into account. The rights of the learning subject are paramount. "When the question of heterogeneity determines our view of children and teenagers we proceed on the assumption that we can perceive them as the same and as different, as continuously identical and changing persons" (Prengel, 2002). Interpretive and diagnostic abilities on the part of the teacher are required in order to understand the demands of the individual learning subject and of the learning group as a whole. In addition, an institutional framework and a favourable school culture have to be created which help to turn heterogeneity into a resource and to see it as a chance to learn from each other.

Last but not least, we identified a domain of competence which we called *Personal Mastery* following the organisational theorist Peter Senge, who coined this term. It illustrates that the "professional self" and hence the teacher can be regarded as the realisation authority of professionalism. Personal Mastery does not only refer to the ability to use one's acquired expert knowledge efficiently, it also draws attention to how a professional deals with him- or herself. This domain is therefore to be understood as the result of an individual learning and education process which integrates and uses acquired experiences while maintaining openness for new experiences in the respective situation. Personal mastery shows when on the basis of knowledge and experience people act "adequately" – i.e. to benefit the pupils in their learning and education – in the specific pedagogic situation. An organisational culture which allows and accepts

mistakes as chances to learn and which makes genuine personal growth possible and gratifying will be the hotbed of this domain.

These five domains of teacher professionalism outline the repertoire of individual competences that have to be acquired in teacher education and in continuing professional development and they also point out the structural and institutional framework which is necessary to foster and support the acquisition and improvement of these domains.

However, there are a number of critical factors in our present education systems, which seem to jeopardize the necessary changes we need to undertake.

David Hargreaves (2003) points out that education is running the risk of ignoring present transformation processes which have a lasting influence on industry and economy. "Schools today are still similar in lots of ways to the schools of 100 years ago" and adds: "Schools are still like the factories that they were established to feed." Is education running the risk of ignoring present transformation processes which have a lasting influence on society? How can expectations for performance both of schools and teachers be matched with the design of appropriate study programmes for teacher education? To answer these questions let us take a look at expertise research which has a lot to tell us about the making of an expert and, consequently, the making of an expert teacher – taken here as the equivalent of a professional.

3. The Making of an Expert Teacher and policy implications

Research on expertise performance have underpinned the prolific suggestions of professionalism research for teacher education and have pointed out some crucial factors for the making of an expert teacher. Accordingly, we know from pertinent studies that expert teachers often develop automaticity and routinization for the repetitive operations that are needed to accomplish their goals, which helps them in non-routine situations or situations of crisis to be more attentive to their pupils' special needs . Expert teachers are therefore more sensitive to the task demands and the specific social situation when solving pedagogical problems and they are more opportunistic and flexible in their teaching than novices or non-experts are. They have fast and accurate pattern-recognition capabilities – "situation awareness" (cf. Endsley 2006) – and perceive meaningful patterns in the domain in which they are experienced, whereas novices or less capable teachers cannot always make sense of what they are confronted with. Although expert teachers may begin to solve problems slower, "they bring richer and more personal sources of information" to problem solutions (Berliner 2004, p. 200f.) They complexify rather than simplify the situations they deal with. Their expertise is specific to a domain and to particular contexts and is developed "over hundreds and thousands of hours." (again Berliner 2004, p. 201)

However, these core capacities, we know now, do not necessarily have to develop even after many years in the job. If time and experience play an essential role in the development of expertise, it is essential, however – as research shows – *how this time is spent* and how experience is acquired and codified so as to draw on it again. Following recent research results, Ericsson proposes "that some types of experience, such as merely executing proficiently during routine work, may not lead to further improvement, and that further improvements depend on deliberate efforts to change particular aspects of performance." (Ericsson 2006, p. 683) He explains this with the detrimental effect of automaticity when people lose control "over the production of their actions and are no longer able to make specific intentional adjustments to them." (Ericsson 2006, p. 694) Expert performers, on the contrary, stretch their performance through continued learning by identifying specific goals to reach and by gradually refining performance with feedback and, consequently, opportunities for repetition. This is why the effects of mere practice differ considerably from those of "*deliberate practice* [emphasis added]", "where individuals concentrate on actively trying to go beyond their current abilities." (Ericsson 2006, p. 699) Often, in order to do so, they will need mentoring and support at the beginning in order to learn by feedback and dialogue to more and more self-monitor and evaluate their performance on their own. This is why mentoring is an important aspect and should be considered as an indispensable part of teacher education.

Against the background of these facts and considerations the question arises of how to re-think teacher education in a way which takes the findings of both professionalism and expertise research into account.

First of all teacher education students need the motivation to really want to become experts in their fields – without the explicit will to constantly improve one's competences the development of expertise and professionalism will not happen. This is what teacher educators should point out to their students right from the beginning of their studies until graduation. Second, professional teacher educators and mentors are required who guide the future experts in their practice activities. Third, lesson study where colleagues watch and critique their fellow students' or fellow teachers' lessons will help interns and also teachers to constantly improve their teaching. In addition, other forms of deliberate practice such as getting involved in real school research as a teacher education student are crucial for the development of expertise and professionalism and should be used much more extensively. By doing so, the acquisition of research based knowledge and the ability to do research on their own will much better merge. Through this, the development of analytical competences which are necessary for the constant deliberation of

practice will be fostered and the knowledge base professional teachers need will be more deeply secured.

Opportunities for all the aspects mentioned must be offered in teacher education programmes and in programmes for ongoing professional development. To put this into practice, teacher education needs schools as responsible partners. A good part of the "clinical" phases of teacher education must be conducted in close cooperation with schools, which become places of professional encounter where one learns to experience and live new solutions and impulses to act. Schools, in turn, must consider themselves as responsible partners of universities and must actively take over responsibility for their present and future personel. A professional learning community can then become the place where topics that are heatedly discussed in the profession and/or in public may find their way into the curriculum as practice-related research projects and are actively worked on by students and teachers using research-guided teaching and learning.

To summarize, research offers a lot of evidence about how to design teacher education and where to put the emphasis in order to turn novices into successful professionals and expert teachers – if only policy-makers listened more accurately what researchers have to say. Of course, it is also the responsibility of researchers to make themselves heard and understood. Take this essay as a plea addressed to policy makers, practitioners in schools as well as to my own community of scholars to collaborate more closely and systematically in the ongoing search for the improvement of the profession. Only by close collaboration will we succeed in bridging the gap between the scholarly strife for better theory and abundant evidence-based data on the one hand and the practitioners' ideas of educational reforms on the other. With this in mind, let's look forward and try to do our best.

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