

The Role of Case Study in Teacher Education: An Attempt to Bridge the Gap between Action and Reflection

1. Introduction

Since international studies provide evidence that high-quality teaching is directly connected with students' learning success, special attention is now being given to the topic of teacher education (cf. among others, Darling-Hammond, 2000; Darling-Hammond et al., 2002; Hattie, 2003; OECD, 2005; Wu, 2005; Schratz & Schritteser, 2007; Zlatkin-Troitschanskaia et al., 2009).

While research on teacher effectiveness is still relatively new in German-speaking countries, the "teacher-effectiveness movement" in the USA began back in the 1980s, and reliable and valid methods for assessing teacher effectiveness have been developed in the context of that research [<http://www.metproject.org>]. Although teacher effectiveness is a highly complex topic (cf. among others Helmke, 2004, Seidel & Shavelson, 2007) that demands dynamic research models (e.g. Kyriakides & Creemer, 2008), there are some factors that can be considered reliable indicators of effective teaching, i.e. teaching that fosters students' learning and supports their gains in achievement.

In this article, I will argue that research into expertise and professionalism theories support this notion of teacher effectiveness. As two mostly separate discourses, findings on how expertise develops and professionalization processes converge when it comes to identifying advanced situation cognition and interpretative skills as focal points for high-quality performance. I, in turn, will endeavour to show that these skills should be given more attention in teacher education programmes - as numerous studies suggest and advocate.

2. Expertise research and the expert teacher

Parallel to research into the possibilities offered by effective teaching, some researchers are now also drawing on the findings of expertise research and relate effective teaching to expertise in teaching. Indeed, expertise research has offered some crucial insights into what distinguishes expert teachers from their less effective counterparts. Experts rely on contextualized thinking when teaching, while less proficient teachers tend to teach with less regard to context. This is the reason why experts are more able to respond quickly and intuitively to events and are more flexible in their practices, which also helps them to creatively improve their performance. Mica Endsley (2006) speaks in this context of "situation awareness", by which she means that experts of all fields share fast and accurate pattern recognition capabilities and perceive meaningful patterns in the domain in which they are experienced, whereas less capable performers cannot

always make sense of what confronts them. I will come back to this notion later in this article. One question that of course arises is whether the results of expertise research can be validly translated into research on the expert teacher. Many of the researchers working on expertise in teaching seem to naturally draw on the results of expertise research. David Berliner (2001) questioned whether this was justifiable and ultimately concluded – on the basis of validated research results – that experts in teaching share characteristics of experts in other fields (such as chess, medical diagnosis and physics problem solving). “There is no basis to believe there are differences in the sophistication of the cognitive processes used by teachers and experts in other fields.” (Berliner, 2001, p. 471) In the analysis below, I follow Berliner’s position when he underlines that propositions derived from research about expertise generally also “set the stage for (the now) validated prototypical set of features of expert teachers.” (ibid., p. 472).

3. Expert vs. Experienced Teacher

There is another question that also needs to be asked here, namely when can we talk of expertise in teaching and which other group(s) of performers can be identified and used to compare the achievement of expertise in teaching? Whereas most of the studies in expertise research compare novices with experts, John Hattie (2003), for example, argues that significant differences are not only to be found between novice and expert teachers but also between expert teachers and teachers who can look back on many years of experience but have not developed expertise in their field. Based on a large-scale literature review, Hattie identifies five dimensions which seem crucial to the development of expertise that goes beyond mere experience.

Expert teachers, as Hattie reports “can identify essential representations of their subject, can guide learning through classroom interactions, can monitor learning and provide feedback, can attend to affective attributes, and can influence student outcomes.” (Hattie, 2003, p. 5)

According to Hattie, these five dimensions lead to 16 prototypic attributes of expertise (ibid., pp. 5 – 9). There is, for example, the capacity of deep subject representation, which enables expert teachers to quickly recognize crucial learning and interaction processes in the classroom. Being deeply at home in their subjects, these teachers are more free to recognize sequences of events, can make better predictions about what is going to happen and act more spontaneously in line with the requirements of the individual students. They can also be more responsive not only to each of their students, but also to the class as a whole. Hattie, parenthetically, criticizes the fact that teachers, also the experienced ones, traditionally focus on “curriculum, assessment, time bells, and other bureaucratic controls” (ibid., p. 6), while more responsiveness to students’ needs would be more beneficial and also more effective in terms of student achievement.

Another of these 16 attributes deals with the special guidance of learning by expert teachers. Due to their ability to perceive the classroom situation on multiple dimensions, they can again guide and monitor learning processes better. They are more context-oriented and have better situation cognition than the average experienced teacher. Another attribute refers to the use of routines and to the fact that expert teachers seem to be more “automatic” than other teachers. While they share well-learned routines with experienced teachers, expert teachers optimise their automaticity to allow them to be able to concentrate on and respond to more complex, i.e. less routine, challenges (cf. *ibid.*, p. 8).

All in all, by far the majority of Hattie’s 16 prototypic attributes explicitly address capacities like being sensitive to context, being receptive to classroom interaction patterns or being responsive to students’ learning attempts and individual needs and interests. The other attributes not mentioned explicitly here also refer to highly significant aspects of the profile of an expert teacher and round this profile off. These include a high level of respect for students on the part of the teacher, having a passion for teaching and learning and the special and personalized ways in which expert teachers influence students’ learning outcomes. Finally, and most importantly, expert teachers are not content to see their students merely achieve the goals set; they transcend surface learning and encourage deep learning in order to see their students go beyond these goals. Surface learning is more about content knowledge and knowing what to do to pass an exam, while deep learning is aimed at understanding meaning and identifying related and extending ideas (*ibid.*, p. 9). Aside from the aspects mentioned above, which are clearly all important, the majority of the attributes identified seem to converge in what is referred to in expertise research as situation awareness.

4. Situation Awareness, Interpretative Skills and Adaptive Expertise

A closer look at the concept of situation awareness, which plays an important role in many expert domains, reveals three factors it seems to combine: *perception*, *comprehension* and *projection*. The perception of relevant information forms the basis of situation awareness. Yet this involves not just perception, but also comprehension, which “demands that people understand the meaning and significance of what they have perceived.” (Endsley, 2006, p. 634) This, in turn, “encompasses how people combine, interpret, store and retain information, integrating multiple pieces of information and arriving at a determination of its relevance.” (*ibid.*). At the highest level of situation awareness, the ability to project is developed in addition to refined perception and comprehension. This essentially refers to “the ability to forecast future situation events and dynamics” (*ibid.*). As Endsley notes: “The ability to project from current

events and dynamics to anticipate future events (and their implications) allows for timely decision making. Experts rely heavily on future projections as a hallmark of skilled performance.” (ibid., p. 635)

Studies on expertise – mostly undertaken with world-class chess players, athletes, pilots or military experts – show that situation awareness increases with increasing expertise, which in turn relies on experience. However, according to these studies (and similar to Hattie’s line of argument, see above), gathering mere experience is not sufficient.

“Although the act of understanding and projecting can become quick and often effortless, i.e. a clear comprehension of the situation springing readily to mind, evidence also shows that experts spend considerable effort at the task of situation assessment.” (ibid., p. 648) Situation awareness must therefore be seen as an area of study that “provides a focal point around which experts integrate the information they gather in order to perform their tasks.” (ibid., p. 649)

“[T]he ability to develop and maintain situation awareness is a significant contributor to the high levels of performance exhibited by experts in the many domains where dynamic situations must be mastered and understood in order to perform well.” (ibid., p. 649)

In an older study on expert intuition, Hubert and Stuart Dreyfus argue (using less technical vocabulary than some of the more recent research on expert performance) that interpretation lays the basis for expert intuition as it determines what is seen as important in a situation. Accordingly, “interpretative ability” constitutes the type of expert judgment that suggests meaningful answers to given situations (Dreyfus & Dreyfus 1986, p. 36).

This notion brings to mind Johann Friedrich Herbart’s concept of “pedagogical tact”, which he elaborated in his 1802 introductory lecture on pedagogy. “The teacher’s pedagogical tact,” writes Andrea R. English in a recent re-interpretation of Herbart’s theory, “truly reveals itself in the way that she effectively responds *in the moment* [...] to the learner’s needs and abilities when these become apparent [...]” (English 2013, p. 146; for an analysis of Herbart’s concept of pedagogical tact see also Van Manen, 1991).

Similar to Hattie’s distinction between expertise and experience, Linda Darling-Hammond and John Bransford (2005) distinguish between different forms of expertise, namely routine expertise and adaptive expertise. The former, they contend, is used to solve everyday problems representative of the specific domain (analogous to what Hattie refers to as “experience”). The latter, in contrast, allows experts to deal with completely novel tasks by looking for new approaches to the problem they are confronted with. In a similar attempt, Nietfeld et al. (2007) take up the idea of crystallized and fluid intelligence (cf. Horn & Cattell 1966) when they state

that “crystallized abilities are essential in the development of well-organized knowledge structures that lead to expertise, while fluidization requires that learners revise existing problem-solving strategies, assemble new ones, search for new analogies, or new perspectives (Nietfeld et al., 2007, p. 511). Just as experience is necessary for expert performance, so-called crystallized abilities can be understood as the routine scaffold of expertise. Yet in every novel situation – and teaching is full of such novelties and uncertainties – only fluidization will provide access to flexible decisions and will offer a larger, more creative repertoire of options.

All the concepts mentioned have one thing in common: they all contend that refined and sophisticated forms of expertise are characterised by a somewhat context-adaptive, fluid, interpretative capacity which finds its equivalent in notions such as pedagogical tact (Herbart), expert intuition (Dreyfus & Dreyfus), fluid or adaptive expertise (Bransford & Darling-Hammond, Nietfeld et al.), or situation awareness (Endsley). While Hattie neither explicitly defines nor uses an explicit term for this type of analysis, it is still present in almost all the attributes mentioned in connection with his distinction between expertise vs. experience. Accordingly, the development of this capacity should be given more attention in teacher education curricula.

5. Case Knowledge and Case-based Methods in Professionalism Research

Berliner (2001) points out that “case knowledge” seems to be a key for opening up ways to make adaptive or fluid expertise grow. When a problem occurs, experts go through their case knowledge until they find “an old friend” – “a case like the one before them” (ibid., p. 476). By having a similar experience to draw on, they have made a good start towards solving the problem. Consequently, Berliner recommends greatly enhancing the role of case study in teacher education. “It is case knowledge that is probably the basis for positive transfer by experts in complex environments, meaning that the ability to codify and draw on case knowledge may be the essence of adaptive or fluid expertise.” (ibid., p. 477)

This observation goes hand in hand with findings in professionalism research (cf. among others Oevermann, 1996), which point out that the formation of a *professional habitus* involves an *intuitive* and *reflective* dimension, which is closely linked to *narrative and interpretative skills* (cf. Charon, 2001, Schritteser, 2013). But before I deal more closely with the notion of the professional habitus, let me first make a few remarks on the use of the term “professional”. Although this term is now widely used, it still remains a frequent topic of discussion.

“The idea of a ‘profession’,” writes Lee S. Shulman in a 1998 article in which he tries to clarify what is usually meant by profession, “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 1998/2004, p. 529)

Accordingly, the role of professions in society is not simply to apply expert knowledge – as is assumed in some accounts of professionalism. In fact, professionalism serves as a source of social cohesion and has to be understood as a literate practice that draws on research-based knowledge and a repertoire of interpretative skills (cf. Kaner, 2012, p.6). However, as Andrew Abbott (1988, p. 318) points out, profession is “not ‘objectively’ definable precisely because of its power and importance in our culture”. According to Abbott, the crucial question in connection with professions is “how societies structure expertise” (ibid., p. 323). “As I have repeatedly argued,” he continues, “expertise is also institutionalized in commodities and organizations. To ask why societies incorporate their knowledge in professions is thus not only to ask why societies have specialized, life-time experts, but also why they place expertise in people rather than things or rules.” (ibid.) Abbott’s answer to this question adopts a systemic approach – he argues that we have professions because our market-governed societies prefer personally-held resources, whether of knowledge or wealth, to any other type of institutionalization (ibid., 324f.). Another answer to this question would be that only people can appropriately and individually understand and adequately respond to the problems they are confronted with in their domain. In other words, if we look at those specifics of professionalism which cannot be met by a set of rules or a type of institution, but can instead only be dealt with using the complex capacities of highly skilled individuals, the intricate pattern of professional performance comes into play (also see Schritteser, 2011, pp. 95 – 102).

Following Ulrich Oevermann’s (1996) line of argument, 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 in any society or culture – such as the legal and the medical systems, which seem to be represented in some or other form in any type of social community. In today’s knowledge society, the education system must also be regarded as such a highly sensitive area when it comes to safeguarding social cohesion and economic development. Against this background, professions, including the teaching profession, have a *mediating task* between collective and individual interests. 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 own 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. This task requires special competences – parallel to those included in theories of

professionalism and as pointed out in the Shulman quote above. The mediating task reflects this *dual commitment* to both society as a whole and to the individual client – be it in a medical, legal or education context (Oevermann 1996) and expresses itself, almost necessarily, in what is referred to as a *case-based approach*. Along with higher-order learning and domain-specific skills, each professional also has to perceive, comprehend and adequately judge every *individual case*. This case orientation again not only demands knowledge, it also implies a *creative and intuitive dimension* which enables professionals to *perceive* and *comprehend* the underlying meaning in a situation, a remark or a gesture and allows them to offer appropriate interpretations and, consequently, fruitful solutions. According to this view, professionals work in uncertain situations in which the assessment of the individual situation is more important than routine or technical solutions. One focus of professionalism, therefore, lies on its *dynamic* and *dialectic* structure. A solid body of research validated knowledge has to be acquired and constantly updated. Professionals will use this body of knowledge to draw their action plans, which they should, in turn, assess against the background of the demands of the specific situation. The latter, however, i.e. the demands of the specific situation, can only become evident to them through a *receptive attitude* which will help them to become aware of what the individual situation – the “case” – has to tell them.

As a matter of fact, and as mentioned earlier in this article, the results of expertise research and professionalism research go hand in hand with recent findings in German research on teacher education (Gruschka, 2009; Helsper, 2001; Oevermann, 1996; Oser & Spychiger, 2005). Andreas Gruschka’s (2009) and Fritz Oser’s and Maria Spychiger’s (2005) empirical studies in particular, along with some smaller studies on teacher professionalism and expertise (cf. Gerhartz, Paseka & Schritteser, 2014) show that teachers, even after many years of experience, tend to be predominantly concerned with their lesson plans and therefore adopt a programmatic instead of a responsive attitude. They cling more to their routine expertise and neglect context and case sensitivity, which, in turn, leads to a blind spot when case orientation would be required. Some teachers tend to reel just off their scripts and observe too little of what is going on among the learners. This is why they often ignore crucial questions asked or mistakes made by their students. They are so focused on their own script that they pay too little attention to the messages coming from the learners. Interestingly enough, this also seems to be a problem in the medical field. Consequently, some medical curricula are trying to foster interpretative skills in an approach referred to as “narrative-based medicine” (cf. Charon, 2001, also Greenhalgh & Hurwitz, 1999). Teacher education programmes have only recently begun to recognize a case-

based approach as an entry gate to adaptive or fluid expertise as a central attribute of professionalism in teaching.

On the basis of research in the fields of expertise and of professionalism research, it is therefore to be concluded that the analysis and interpretation of cases and the use of case study to impart case knowledge and interpretative skills should become an integral part of teacher education programmes. The aims of such an approach will be

- to cultivate a receptive, context-sensitive attitude and the comprehension skills which are essential when it comes to encouraging deep learning in students;
- to foster observational and diagnostic skills which are central to monitoring student progress and potential;
- to learn to analyze the specifics of a situation in order to find out “what is the case” and why it is an instance of a more general question, which becomes relevant given the dual commitment of teachers both to society and to the individual student;
- to try and bridge the gap between “doing” practice oneself and reflecting on practice incidents, which is crucial when it comes to the definition and assessment of professional standards.

References

- Abbott, A. (1988). *The System of Professions. An Essay on the Divisions of Expert Labor*. Chicago and London: The University of Chicago Press.
- Berliner, D. C. (2001). Learning about and Learning from Expert Teachers. *International Journal of Educational Research*, 35, pp. 463-482.
- Darling-Hammond, L. & Bransford, J. (2005). *Preparing Teachers for a Changing World. What Teachers Should Learn and Be Able to Do*. San Francisco: Jossey-Bass.
- Charon, R. (2001). Narrative Medicine. A Model for Empathy, Reflection, Profession, and Trust. [Electronic version] *JAMA*, Vol 286, No. 15. Retrieved January 1, 2013 from Jama.jamanetwork.com/article.aspx?articleid=194300.
- Darling-Hammond, L. (2000). Teacher quality and student achievement: A review of state policy evidence. *Education policy analysis archives*, 8 (1), [Electronic Version] Retrieved June 29th, 2014 from <http://epaa.asu.edu/ojs/article/view/392>
- Darling-Hammond, L., Chung, R., & Frelow, F. (2002). Variation in teacher preparation: how well do different pathways prepare teachers to teach. *Journal of Teacher Education*, 53(4), pp. 286– 302.

- Dreyfus, H. L. & Dreyfus, S. E. (1986). *Mind over Machine. The Power of Human Intuition and Expertise in the Era of the Computer*. New York: The Free Press.
- Endsley, M. R. (2006). Expertise and Situation Awareness. In: Ericsson, K.A., Charness, N., Feltovich P. J. & Hoffmann, R. R. *The Cambridge Handbook of Expertise and Expert Performance*. Cambridge: University of Cambridge Press, pp. 633 – 651.
- English, A.R. (2013). *Discontinuity in Learning. Dewey, Herbart and Education as Transformation*. Cambridge: Cambridge University Press.
- Greenhalgh, T. & Hurwitz, B. Narrative based medicine. Why study narrative? *BMJ*. 1999 January 2; 318(7175), pp. 48–50.
- Gruschka, A. (2009). *Erkenntnis in und durch Unterricht. Empirische Studien zur Bedeutung der Erkenntnis- und Wissenschaftstheorie für die Didaktik. [Knowledge and Cognition through Teaching. Empirical Studies on the Relevance of Epistemology and the Theory of Science]* Wetzlar: Büchse der Pandora.
- Hattie, J. (2003). *Teachers Make a Difference. Distinguishing Expert Teachers from Novice and Experienced Teacher*. [Electronic Version] Retrieved June 29th, 2014 from [http://www.education.auckland.ac.nz/webdav/site/education/shared/hattie/docs/teachers-make-a-difference-ACER-\(2003\).pdf](http://www.education.auckland.ac.nz/webdav/site/education/shared/hattie/docs/teachers-make-a-difference-ACER-(2003).pdf)
- Helsper, W. (2001). Praxis und Reflexion: Die Notwendigkeit einer „doppelten Professionalisierung“ des Lehrers. [Practice and Reflection: On the Necessity of a Twin Habitus for Teachers] *Journal für lehrerInnenbildung*, H. 3, 2001, pp. 7 – 15.
- Hofer, M. & Schritteser, I. (2012). *Lehrerbildung als kulturelle Praxis? Wie Pierre Bourdieus Habitusbegriff die Kulturen der Lehrerbildung und der Schulpraxis einander näher bringen könnte... [Teacher Education and Cultural Practice? How Pierre Bourdieu's Concept of Habitus could Help to Bring Teacher Education Closer to School Practice]* In: Kraler, C. et al. (Eds.). *Kulturen der Lehrerbildung. Professionalisierung eines Berufsstandes im Wandel. [Cultures of Teacher Education. The Development of a Profession]* Münster: Waxmann, pp. 141 – 154.
- Horn, J. L. & Cattell, R. B. (1966). Refinement and test of the theory of fluid and crystallized general intelligences. *Journal of Educational Psychology*, 57, pp. 253-270.
- Kanes, Clive (2010). *Elaborating Professionalism. Studies in Practice and Theory*. Heidelberg/London/New York: Springer.
- Kyriakides, L., & Creemers, B. P. (2008). Using a multidimensional approach to measure the impact of classroom-level factors upon student achievement: A study testing the validity of the dynamic model. *School Effectiveness and School Improvement*, 19(2), pp. 183-205.

- Nietfeld, J. L., Finney, S. J., Schraw, G., & McCrudden, M. T. (2007). A test of theoretical models that account for information processing demands. *Contemporary Educational Psychology*, 32, pp. 499-515.
- Oevermann, U. (1996). Theoretische Skizze einer revidierten Theorie professionalisierten Handelns. [A Theoretical Draft of a Revised Theory of Professional Action] In: Combe, A. & W. Helsper (Eds.), *Pädagogische Professionalität. Untersuchungen zum Typus pädagogischen Handelns* (pp. 70-182). [Professionalism and Pedagogy. Studies in the Pattern of Pedagogical Activity] Frankfurt/Main: Suhrkamp.
- Oser, F. & Spychiger, M. (2005). Lernen ist schmerzhaft. Zur Theorie des Negativen Wissens und zur Praxis der Fehlerkultur. [Learning is Painful. On the Theory of Negativity and a New Error Culture] Weinheim und Basel: Beltz.
- Schön, D. A. (1984). *The reflective practitioner. How professionals think in action.* Perseus Books. London: Basic Books Inc.
- Schratz, M. & Schritteser, I. (2007). White Paper on Teacher Education. Comissioned by the Austrian Ministry of Education, the Arts and Culture. Manuscript.
- Schritteser, I. (2011). Professionelle Kompetenzen. Systematische und empirische Annäherungen. [Professional Competences. Theoretical and Empirical Approaches. In: Schratz, M., Paseka, A. & Schritteser, I. (Eds.). *Pädagogische Professionalität: quer denken - umdenken - neu denken. Impulse für next practice im Lehrerberuf.* [Thinking Pedagogical Professionalism Outside the Box. Impulses for *Next Practice* in the Teaching Profession] Wien: facultas.wuv, pp. 95 - 122.
- Schritteser, I. (2013). Pädagogische Professionalität entfalten: eine besondere Form des Lernens? [Professionalism in Education: a Special Type of Learning?]In: Christof, E. & Schwarz, J.F. (Eds.). *Lernseits des Geschehens. Über das Verhältnis von Lernen, Lehren und Leiten.* [Being Mindful of Learning. On the Relation between Learning, Teaching and Leadership] Innsbruck: Studienverlag, pp. 85 – 100.
- Seidel, T., & Shavelson, R. J. (2007). Teaching Effectiveness Research in the Past Decade: The Role of Theory and Research Design in Disentangling Meta-Analysis Results. *Review of Educational Research*, 77(4), 454-499.
- Shulman, L. S. (1998/2004): *The Wisdom of Practice. Essays on Teaching, Learning, and Learning to Teach.* San Francisco: Jossey Bass.
- Van Manen, M. (1991). *The Tact of Teaching. The Meaning of Pedagogical Thoughtfulness.* Albany: The State University of New York Press.

Wu, R.T.Y. (2005). Relationship Between Teachers' Teaching Effectiveness and School Effectiveness in Comprehensive High Schools in Taiwan, Republic of China. Paper Presented at the International Congress for School Effectiveness and Improvement Conference, Barcelona, Spain, 2005.

Zlatkin-Troitschanskaia, O., Beck, k., Sembill, D., Nickolaus, R., & Mulder, R. (Eds.). (2009). Lehrprofessionalität. Bedingungen, Genese, Wirkungen und ihre Messung. [Teacher Professionalism. Conditions, Development, Impact, Testing] Weinheim: Beltz.