

# From Practice to Theory – Redefining the Role of Practice in Teacher Education

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In recent years, the term “practice” has been given a key role in the debate about the reform of teacher education in Germany and in other countries. Traditionally in university teaching, theory is put before practice, and the teaching-learning process is being viewed as one proceeding from theory to practice rather than the other way around. It does not seem accidental that we talk about a theory-practice-problem and not a practice-theory problem. Many who believe that more practice is needed in teacher education, see practice merely as an outcome of theory, or as something opposite to theory. Many administrations have chosen a rather narrow definition of practice by simply adding phases of practical training (“Praktikum”, “Praxis semester”) to the otherwise unchanged curriculum. To some extent such kind of practice is of great value for university graduates. If such practica are well chosen and the practicum provider meets basic standards, they can teach the student much about the world of their profession and help them establishing contacts with prospective employers.

Yet, practice is closely intertwined with theory: it is the incentive and object of theoretical reflection, and it is the touchstone of any theorizing. Hence, for the teaching-learning-process, practice must become the ubiquitous. In my view, mostly needed in university education are three forms of *scientific* practice: First, concrete, exemplary problems and tasks as a starting point for teaching abstract theories in one’s field to provide the basis for communication between teachers and learners and for learning motivation.

Second, opportunities for participating in the process of experimental research and/or doing small research projects of one’s own in laboratory settings to pro-

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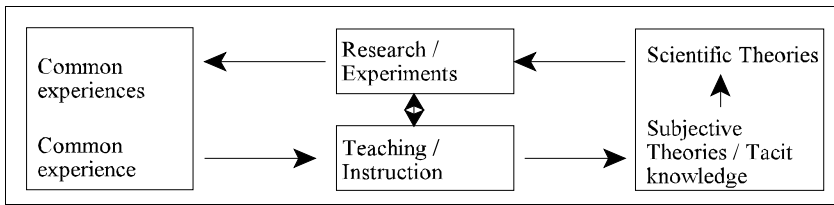
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vide the basis for testing out the validity of hypotheses and theories and make new discoveries.

And third, opportunities for taking up roles in the real world for solving real problems and tasks to provide a basis for integrating theoretical knowledge, technical skills and moral principles and responsibilities.

Two centuries ago, Alexander von Humboldt, has founded a new kind of universities in Germany on the idea that, in this institution, teaching should always be rooted in research (*Lehre aus Forschung*). Humboldt did not think that society needs yet another institution for the transmission and acquisition manual and technical practices; he rather thought that society needs at least one place of *scientific practice*, that is, an place in which all our knowledge is gathered and submitted to critical examination and *experimental research*, and in which examined knowledge is transmitted to new generations. This place should be open for all kinds and ways of knowing and open for all kinds of contacts with reality. Yet it should be guided by a strict commitment to truth and social responsibility. For this end, it should be protected against threats to truth seeking and social responsibility, that is, against the pressure by those in power, against the power of social conventions, against the seductions of short term profits, and against particular self-interests of those in charge of science.

After nearly three decades of research and teaching at universities, I come to think that the foremost problem of university teaching is not how we can help students to apply scientific theories in practical settings but a) how we can help them to comprehend those theories, b) how they can test the truth claims and the empirical validity of those theories, and c) how they can integrate the theoretical and technical knowledge of their future profession with their own moral principals as a citizen in a democratic society. Only if we truly understand the process of learning and teaching at university, I believe, we can achieve an effective and valuable reform of university education.



**Figure 2** The role of common experiences and concerns in the process of knowledge creation and acquisition.

### *The Communication and Motivation Basis of Learning*

Years ago, as many of my colleagues, I put main emphasis in my teaching on theory. I began each seminar with definitions and overviews on the major theories relevant for the theme of my course. Then I proceeded to research findings and assigned students to read literature and to write papers on these things. If the course went well and there was time left at the end of the course, I added some practical illustrations of the theories dealt with (like videos, excursions, practice reports etc.). Obviously, my presentations were entertaining; I often got applause for my course by the students. The students delivered nice papers and did well on their tests. So I was pleased with what I did.

Yet, one day I overheard a conversation of some of my best students on the subject of the course which made me shiver: it seemed that they had not comprehended any of the theories that I had presented. Their good papers and test results appeared to be nothing more than to reflect their high ability to assimilate information. When talking with them about my observation they admitted that they had gotten little out of my course which deemed them useful for their future tasks as a teacher. Later, through studies on teachers, I learned that teachers hardly use modern insights of educational research and educational psychology in their everyday teaching but rather rely on traditional practices. This experience made me review my own teaching. Two questions arouse: a) why do students often find it hard to memorize and understand even simple theories on subject matters, and b) why it is so hard for them to give up old believes in favor of new, much better validated theories?

Modern psychological and educational research gives clear answers to these two questions (Sprinthall et al., 1994; Piaget, 1973). First, students find it hard to memorize novel theories if they cannot make sense of them in terms of familiar knowledge (Jean Piaget called this part of the learning process *assimilation*). Thus novel theories can be taught effectively only if they relate to the practice of the students, to their common language and their common concerns (Dewey, 1934; Oja & Smulyan, 1989; Sprinthall et al., 1996; Oser et al., 1992). Second, students cannot really understand novel theories, that is, they cannot incorporate them into their core set of knowledge and competencies unless they change or even give up some of their basic convictions and habits (Gardner, 1990). Therefore, this process of *accommodation* (Piaget) or deep level processing (Marton & Säljö, 1976) is often accompanied by feelings of anxiety and fear.

To cope with this fear, students need to be strongly motivated to learn. They need to understand that learning a particular theory and competency is very important for them. Some teachers believe that such learning motivation can be established through extrinsic pressure or rewards (tests, examines, grades etc.). This may be true to some extent for the process of assimilation, that is, of rote learning and mimicking the *habitus* of the professionals of one's own field. However, extrinsic motivation does not seem to work when real understanding and accommodation is the aim of the teaching-learning process.

For both purposes, for enhancing assimilation of and accommodation to novel knowledge on behalf of my teacher students, it seems *I had to redefine the role of practice in the process of knowledge acquisition*. During the past years, I completely changed the sequencing of my courses, giving practice more space and putting it at the beginning rather at the end of my course. My students come from very diverse backgrounds. My teacher students major in all kinds of subjects: Sports, Mathematics, History, French and so on. I have students from first to tenth semester. My main course for teacher students is one on fostering moral and democratic competencies of adolescents and adults.<sup>2</sup> In my continuing education course on "Mentoring," my students are experienced teachers, teacher students and students majoring in psychology. So we really needed a common basis for communication, which let everyone – teachers as well

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<sup>2</sup> For more details see my internet-pages: <http://www.uni-konstanz.de/ag-moral/>

as students – contribute their best to the course. This common basis is provided by a common pedagogical experience, for which I usually take a dilemma discussion.

My experiences with this approach support cognitive-developmental and constructivist theories. Trying to solve together a moral dilemma through a highly controversial yet fair and rational ethical discourse, turns the class of individual learners into a learning community that supports and facilitates learning processes in every participant rather than inhibits them as is often the case. It seems that promoting communication and understanding creates a stronger motivation (and better conditions) for learning than an other means. During the remainder of my course, the students press forward and control the pace of learning rather than me the teacher. This way, my students and I get a better basis for communication; they understand better what I mean and I see more easily where they have problems in understanding. Moreover, they also get more motivated to do deep level processing and to accommodate their subjective theories to novel insights. They also become motivated to take over voluntary assignments to grow more. I rarely need to use extrinsic motivators like grades or credits for making my students learn and work for the seminar.

Another important factor of effective teaching-learning process seems to be the opportunities provided in courses to test new knowledge in experimental and real-life settings. Norman Sprinthall and his colleagues (Sprinthall et al., 1996) call these role-taking opportunities – not role-playing opportunities but opportunities for taking over serious responsibilities. Through these opportunities, the trustworthiness and dependability of new knowledge is considerably increased. People will hardly, if ever, give up old, well-tested knowledge for new knowledge if the latter is merely handed down as a theory. Theoretical knowledge will remain particular, non-integrated and bound to special social settings (like examinations) but will not become part of an individual's integrated knowledge base.

## *Opportunities for Experimental Research*

The traditional definition of the problem as a theory-to-practice problem rests on a teacher-centered point of view rather than on a student-centered point of view. To become a university teacher, we have to study all major theories in our field. Then we pass these theories on to our students. Of course, there are variations to this model. On the one hand, there are experimental sciences like physics, which require university professors to do very much scientific practice, that is, to examine prevailing theories critically and test them in *strict* experiments. An important part of this practice is, to use Popper's (1934) terminology, a) examining the information content (*Gehalt*) of a theory, and b) testing its empirical validity. Information content means that a theory is both simple and *falsifiable*. *Falsifiable* means that the theory lets us predict events that have a very low *a priori* probability. A simple, highly falsifiable and yet true theory is the ideal form of knowledge. Such knowledge can be easily taught and learned (because it is simple), and it is the most valuable kind of knowledge (because it lets us correctly predict events which we otherwise would not be able to foresee). Yet even in physics, many professors pass on much knowledge which they never have tested themselves in research or have studied closely by reading research reports but have acquired only through reading text books. On the other hand, there are many disciplines in the universities which base their teaching very little on research and have little in common with the Humboltian idea of teaching out of research (*Lehre aus Forschung*). In the so-called *applied sciences* (e.g., medicine, business administration, education, even in chemistry) there is little scientific practice and, consequently, little teaching based on scientific practice. Research is mostly used to study the effectiveness of particular treatments or interventions but not to test the truth of general theories with high information content. In other "sciences" like law and theology, scientific practice as defined above is almost non-existing.

## *Role-taking Opportunities*

Role-taking opportunities also seem to be important for the development of moral and democratic competencies. In a study by Stefanie Herberich (1995), the level of moral judgment competence – as measured with Lind’s (2000b) *Moral Judgment Test* – was positively related to role-taking opportunities provide in and outside university’s learning environment (see below).

However, there is a real danger that certain kind of practica during university education may reinforce wrong knowledge and bad practice rather than improve learning and, therewith, also impede future practice. This danger seems to particularly given a) when practica are done in isolation from the process of teaching and learning at university, and b) when there are no ways of testing the validity of old and new knowledge and weighing their verisimilitude and empirical content (Popper, 1934). If common sense turns out to be false and better knowledge is at hand, one has, of course, to replace wrong knowledge and bad practice through better alternatives.

### *Empirical Evidence: The Importance of Opportunities for Role-Taking and Dilemma-Discussions*

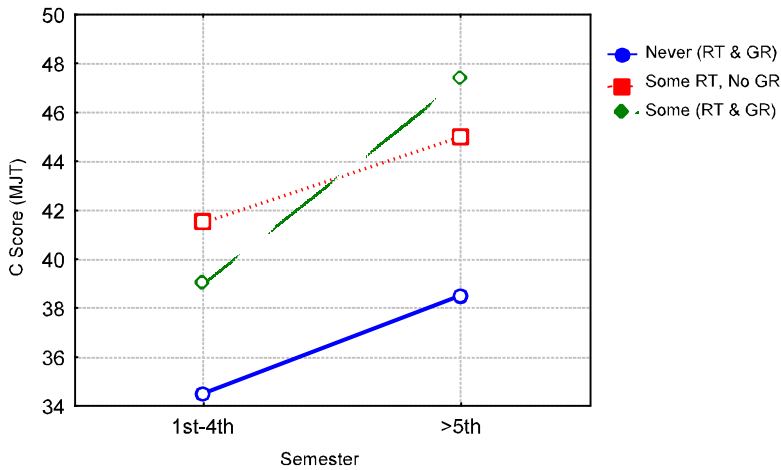
Two recent, unpublished studies demonstrate the importance of an adequate understanding of the practice-theory problem in teacher education (and in education in general). In the first study, we have tried to find out what features of the learning environment in universities promotes moral judgment competence (Lind, 2000e/in press). Moral judgment competence has been defined by Lawrence Kohlberg (1964) as “the capacity to make decisions and judgments which are moral (i.e., based on internal principles) and to act in accordance with such judgments” (p. 425). We operationalized this definition in the *Moral Judgment Test* by asking the subject to evaluate moral arguments in favor and against one’s own opinion on a highly controversial moral decision. The MJT tests whether subjects are able to suspend their own opinion and to rate arguments in regard to their moral quality rather their opinion agreement. This ability

cannot be faked under condition in which moral attitudes can (Lind, 2000c/in press). It is indexed in the MJT through the C-score.

There is strong evidence from various longitudinal and cross-sectional studies *that* in most cases higher education promotes this competence (Lind, 2000c; Rest, 1988). Yet little was known which aspect of the learning environment is responsible for this. Norman Sprinthall suggested a two-factor theory of counseling and teaching, which gave us a good hint. He hypothesized that the optimal conditions for learning are given through linked opportunities for role-taking and guided reflection (Sprinthall, 1994, 1996). He supposed that neither factor would be effective for learning by itself. Challenging the individual's competencies by confronting him with tasks and problems helps to stimulate cognitive-developmental process but they can easily overwhelm the learner and hinder learning if no help and guidance of provided to overcome difficulties and to answer questions. Alike, helping and guiding the learner is important but can easily becoming boring and ineffective if no tasks and problems challenge the learner and motivate him or her to appreciate this help and guidance. Herberich (1995) asked university students in various fields of study to report their opportunities for role-taking and guided reflection inside and outside university. The questionnaire which we used, the ORIGIN/u (see Lind, 2000e/in press; also <http://www.uni-konstanz.de/ag-moral/ORIGIN-U-96E.htm>) was designed to cover as diverse learning opportunities as tutoring, research assistance, holding a position in a club, working for amnesty international, or leading a church group. The most significant findings were a) that such opportunities are relatively rare for German university students and only a minority has at least a minimal amount of them, b) that a minimal amount of role-taking opportunities (linked with opportunities for guided reflection) are positively related to students' level of moral judgment competence, and c) most importantly, that these opportunities are strongly related to the amount of *increase* of moral judgment competence during their study (*Figure 2*; see also Lind, 2000e/in press). Similar correlations ( $r = .34$ ) were found by Susana Patiño (1999) in a study of Mexican college students.

In our second study we investigated the role of moral judgment competence on the learning behavior of teachers, who participated in a continuing education program at the University of Konstanz. These teachers were tested with the





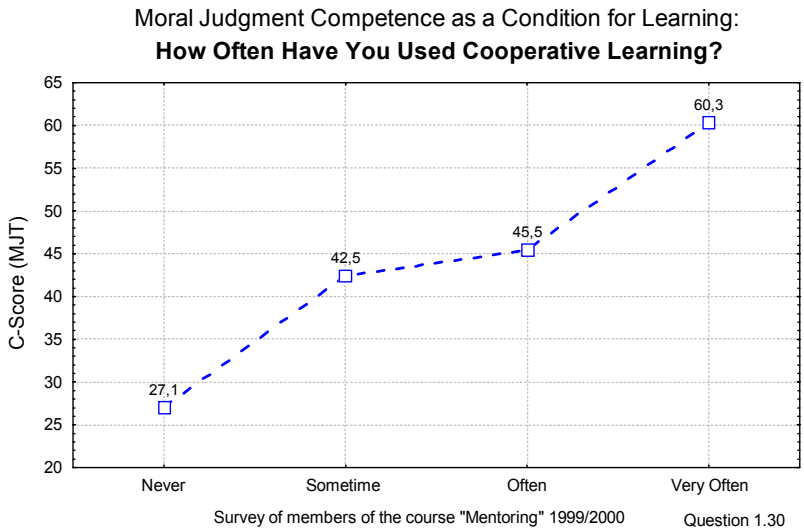
**Figure 3** The impact of opportunities for role-taking and guided reflection on the increase of moral judgment competence (C-score; MJT) during university study (cross-sectional study). German university students, N = 271.

MJT and they were asked to evaluate the usefulness of the program as a whole and parts or units of the program. They also were asked to report about their teaching methods (Lind & Schumacher, 2000). The findings were astonishingly consistent.

The data indicate a systematic relationship between moral judgment competency on the one hand and a) the ability to utilize learning opportunities and b) to engage in alternative, open teaching activities on the other: a) Those teachers who reported that they found the program units “Developmental-clinical Supervision” and “Support and Challenge,” and the optional assignments *very useful*, had much higher C-score on the Moral Judgment Tests than the other participants. b) Teachers who use non-traditional teaching techniques (like Peer-Teaching, Cooperative Learning, and Goal-oriented Project Work) also showed much higher C-scores than their colleagues. In other words, teacher with high level of moral judgment competence were more able to make use of the given learning opportunities and were more able to explore the advantages of unconventional, non-directive teaching methods than teacher with low moral judg-

ment competence. Examples for both findings are given in the figures in the appendix (see also Lind & Schumacher, 2000).

Both studies seen together support the notion that moral judgment competence and ethical discourse competence are key competencies in the process of learning. These competencies in turn require a practical (at least semi-real) basis of learning, which provides opportunities for role-taking and guided reflection. For this, I found dilemma-discussion a very helpful and efficient method (Lind, 2000a). Yet other methods may also be tried out.

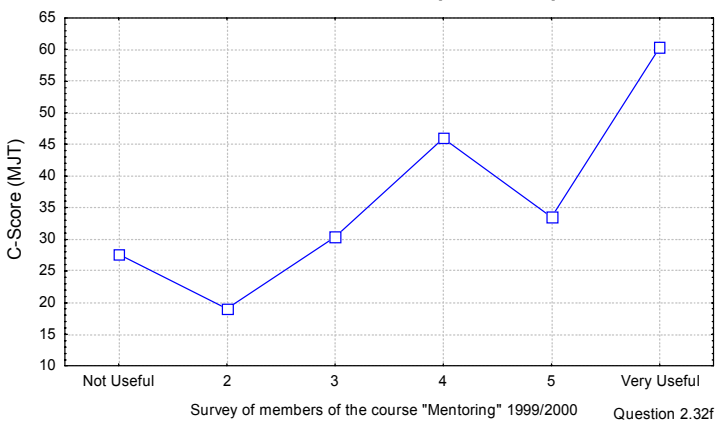


*Summary: Ten Principles of Teaching and Learning in Teacher Education (or in any Education Process)*

1. Practice is something more than (and possibly also something very different from) the sum of all accumulated routines and conventions in a particular profession.
2. Practice is “actual” knowledge, that is knowledge which is incorporated in a person’s (or an institution’s) doing as distinguished from knowledge which is merely conceptual and verbal.
3. As there are different types or levels of knowledge, there are also different levels of practice:
  - a. Unreflected *imitation* of routines and conventions in one’s profession.
  - b. Single-handed “survival” strategies based on long-standing *experience*.
  - c. Principles-guided, interactive decision-making based on systematic experimentation.
4. Scientific theories are very important:
  - a. They mark out high points in the accumulation of knowledge through imitation, experience and systematic experimentation.
  - b. They explicate and preserve our scientific knowledge and lay the ground both for sophisticated reflections and technologies.
  - c. Yet, scientific theories do not qualify as a good starting point for individual’s *learning* process, nor do they suffice to sustain learning and development.
5. The best way to initiate and sustain processes of learning and development is to start out with practice rather than with theory:
  - a. Practice provides the common ground for successful communication between teachers and students; this is the most important condition for transmitting any kind of knowledge.
  - b. Practice provides a safe ground for action and decision making.
  - c. Practice provides the criteria for the relevance and validity of abstract theories.
6. Learning and development proceeds through cycles from practice and to theory and back to practice again, thereby moving from a low level of knowledge to ever higher levels.
7. Gaining knowledge through systematic hypothesis testing is characteristic for the level of university and professional education. As an ideal, learning is initiated and sustained through a particular sub-cycle of practice and theory:

- a. Experiments and crucial observations demarcate the range of phenomena that belong to a particular area of study or field of professionalization.
  - b. Theories give a systematic account of this and many other phenomena and observations.
  - c. Opportunities for field-testing theories (role-taking) provide the basis for developing trust into the validity of new knowledge and integrating it into an individual's structure of routines, conventions and experiences; whereby "integrating" means both a) to accept new knowledge as valid, and b) to revise routines and conventions if they prove to be invalid.
8. University teaching in the tradition of Humboldt (teaching from research) provides students with opportunities for learning through practice (experimentation and role-taking). Yet, in large parts, universities fail to provide those opportunities *equally* for *all* students, and too often they emphasize theory only.
  9. Opportunities for experimentation and role-taking are crucial not only for the acquisition of scientific knowledge but also for the development of moral and democratic competencies.
  10. Thus, reforms of teacher education (and university education in general) must not remove from studying more and more opportunities for scientific practice (experimentation) and moral practice (role-taking) from the curriculum by widening the syllabus and shortening the time for study.

Moral Judgment Competence as a Condition for Learning:  
**How Useful Was the Unit "Developmental Supervision"?**



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