

Widening Identities, Developing Competences

A pilot program for general pedagogical competence of HE teachers

Asko Karjalainen, PhD, Director of the Teaching Development Unit,
University of Oulu, e-mail: asko.karjalainen@oulu.fi

Säde-Pirkko Nissilä, PhD, Principal Lecturer, School of Vocational and
Higher Teacher Education. Oulu University of Applied Sciences, e-mail:
sade-pirkko.nissila@oamk.fi

Universities are supposed to offer the highest education, but do they guarantee also the highest learning? The two universities in Oulu started to educate university researchers to professional teachers. The aim was to develop their teacher identities and make them see how to help their students to attain better learning outcomes.

A program for HE teacher education was planned in 2006 and put into practise in 2007. It was allocated 60 ects associated with 1600 hours of study, being the widest for HE teachers in Europe. Despite the high admission criteria, there were almost 100 HE applicants out of whom 50 were approved.

The program was planned by a joint expert team through competence analysis, setting general aims, defining core courses, core contents, learning objectives and teaching and assessment methods, as well as designing quality assurance policy and follow up study procedures and confirming the admission criteria. 100 basic skills of a good higher education teacher were specified. These raw items were combined and classified to form 8 core competencies. They were formulated so that the overall learning outcomes of the program could be established. The study program was divided into seven modules.

The significance of teaching has become clearer to the participants. Self-reliance, self-awareness and enthusiastic attitude are obvious. The developing professional identity as a teacher has begun to rise, enriching the earlier researcher identity. An untrained teacher in most cases seems to think that teaching implies learning. This study shows that the pilot education has freed HE teachers from this misconception. Teachers have become more aware of the complexity of teaching and learning processes. They have received tools to master the complexities and construct meaningful learning.

Key words: higher education, teacher education, teacher identity,
teacher competence

Introduction

In Finland higher education institutions are divided into newborn applied science universities and traditional research universities. There is no formal teaching qualification required from research university teachers. They have, however, been offered pedagogical courses on a voluntary basis since 1980's. In applied science universities the nationally accredited teacher education (60 ects credits/ 1600 hours) has been mandatory from the very beginning.

The situation is slightly paradoxical and it allows some critical questions. How can research universities assure the quality of teaching and education? How can they compete in national level

with the applied science universities in attracting the best students? Are research universities able to motivate and encourage the most talented and critical students to continue their studies after graduation and take the challenges of science. The last question is the most critical. Pedagogically incapable teachers do not increase the attraction of a scientific career. Incapable teaching often contributes to superficial learning outcomes, which endangers the foundations of science itself. Higher education organisation is not just an ordinary school. It is also a research oriented scientific community, being responsible for global knowledge development. The purpose of higher education system is to foster and encourage scientific competencies and promote progress in science. In terms of creativity and expertness this means the top challenge. It means the highest quality demand for education. Thus the purpose of higher education system is to foster and encourage deep learning. The progress of science can only be based on in-depth learning.

According to the studies carried out in the NETTLE project, the situation seems to be quite similar all over the European higher education area. There may be pedagogical requirements for the teaching staff specified in a law or in some other official statements. How the specific requirements are implemented in practise, is most often rather unclear. According to the data the most of the universities do not anyhow have articulated requirements for university teachers' training. Many of them do provide some training but the participation is voluntary. 38% of HEIs have mandatory training for the new employed teaching staff, i.e. in UK, Sweden, Norway, the Netherlands, Latvia, Cyprus and Finland (Finnish applied science universities). The volumes of the pedagogical courses or training programs vary between 16 and 1600 hours, with the average of 330 hours. (Koltcheva, Nadia, Van de Ven & Maarten 2007.)

In this article we will present the design and delivery of an intensive teacher education program for higher education teachers. We will also later examine the outcomes of the program so far and analyse teacher students' essays to familiarize with their experiences during the process of pedagogical education.

Theoretical framework

Educational literature presents arguments for and against higher education teachers' pedagogical training. Trowler & Bamber (2005) review this discussion in their article and ponder pros and cons for the compulsory pedagogical education. Their view is that: "from a purely rational- purposive perspective, compulsory training is self-evidently a good idea: train higher education teachers to teach and they will do a better job than untrained ones. However the rational purposive view, seeing

policy implementation as goal oriented and logical is unrealistic – the political process add complexity”. (Trowler & Bamber, 2005, 80.)

It seems that there do exist at least three important perspectives, which should be taken into account when designing and implementing higher education teacher education.

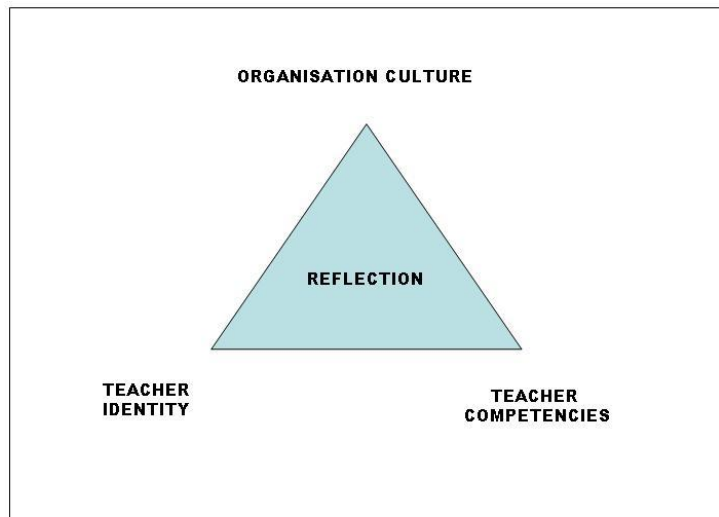


Figure 1. The perspectives of HE pedagogical education.

Training may increase an individual teacher’s focusing on students. It can improve a number of aspects of teaching as judged by students (organization, group interaction, rapport etc.). Training can change teachers teaching so that their students improve their learning (ibid, 85) The organisation culture of the universities, however, easily suppress the larger change. “If individual changes don’t translate to the institution, how much less change is there that a whole country’s higher education system could be significantly reoriented through an approach addressed at the level of the individual practitioner.” (ibid, 84).

In a sense organisational change is always based on learning. According to the social cognition theories it is meaningful to assume that sustainable change will take place through the learning of individuals if there emerges reflective sense-making interaction among institutional actors (Kezar 2001). The problem of the teacher educator is the same as any teacher’s in relation to his/her students: how to assist such deep learning that will make a difference. This speaks for the intensive

teacher education which promotes authentic teacher competencies and activates the teacher as a change agent in academic organisational cultures.

An untrained teacher in most cases seems to think that teaching implicates learning. The teacher explains, describes, shows etc. the subject matter to the students and it is enough. Related to this misconception, a teacher may think that knowledge is “a commodity which can be transferred, by the act of teaching, from one container to another or from one location to another” (Fox, 1983). Teachers’ personal theories of teaching and their common sense assumptions stipulate the teaching practises, when teachers do not have wide enough repertoires of pedagogical vocabulary and concepts. Teachers’ power to change education is more and more conditioned by their reflective capabilities and professional competencies (Fox, 1983; Menges & Rando, 1989; Lloyd Yero, 2002.)

Since the birth of educational thought teaching has been seen as a most complex and demanding task. Clarifying the elements of successful teaching has been one of the most challenging tasks for the educational experts since the days of Pestalozzi. Competency to teach is not an inborn talent, neither by any means included in the personal progress of a researcher. The phenomenon of teaching and learning situations is by definition an overriding source of complexity. Teaching as a task is certainly one of the most troubled duties.

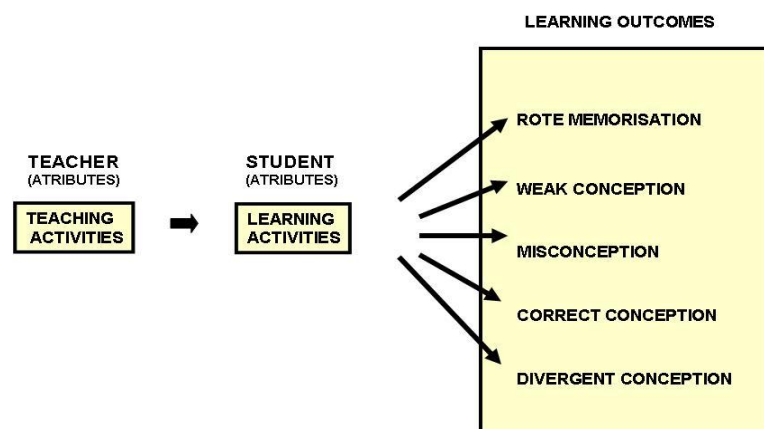


Figure 2. The pedagogical arrow.

The arrow shows that teaching makes difference in students’ learning activities, it does not cause learning. Learning outcomes cannot be produced by teachers but a student can progress in learning

without any teaching. This builds the basis for overall complexity of the teaching and learning processes. A competent teacher is able to help the student to study more efficiently than would be the case if the student had to learn the subject matter by him/ herself alone. The second source of complexity comes from the concept of learning. The level of learning always varies and the teacher should be able to reflect on the variations. How to teach in such a way that the students' learning outcomes surpass the knowledge of the teacher (divergent conception), which may be the eventual aim of higher education?

The context, design and implementation of the project

Teaching Development Unit (TDU) in the University of Oulu started together with the School of Vocational and Higher Teacher Education (SVTE) in Oulu University of Applied Sciences a new compatible program for HE teacher education, which was planned in 2006 and put into practise as a pilot project in 2007 with 50 participants. The Program was allocated 60 ECTS credits associated with 1600 hours of study. The program was planned to span over a three-year period. As a full time study program, though, it is possible to complete in one year.

The program is fully compatible with the Finnish comprehensive teacher education programs. This means that it meets the national standards set up by the law on Finnish teacher education. The accepted completion of the program certifies the teacher to teach in all Finnish educational organisations supposing that the mastery of the discipline is also properly demonstrated.

The program was planned by a joint expert team. The phases of the planning process were: 1. Carrying out the competence analysis, 2. Setting general aims for the program, 3. Defining core courses, core contents, learning objectives and teaching and assessment methods, 4. Designing quality assurance policy and follow up study procedures, and 5. Confirming the admission criteria.

From core competences to delivery.

Careful competence analysis was started by a brainstorming session, in which over 100 basic skills of a good higher education teacher were specified. These raw items were combined and classified to form 8 core competencies. They were formulated to concretize the overall learning outcomes of the program.

According to the analysis a competent teacher in any academic discipline in a higher education institution: 1. Should be committed to the scholarship of teaching and learning in his/her discipline

and in the interdisciplinary scientific community, 2. Should demonstrate research-based and reflective practise, 3. Should possess creative approach towards challenges, 4. Should show and promote active participation in national and international networks, 5. Should be able to use modern and applicable learning centred teaching and assessment methods, 6. Should show positive attitude and possess skills towards taking responsible tasks as a leader and supervisor in his/her organisation, 7. Should be an interactive and communicative agent (of change) in the academic community and 8. Should be able and willing to facilitate profitable cooperation with life outside the university.

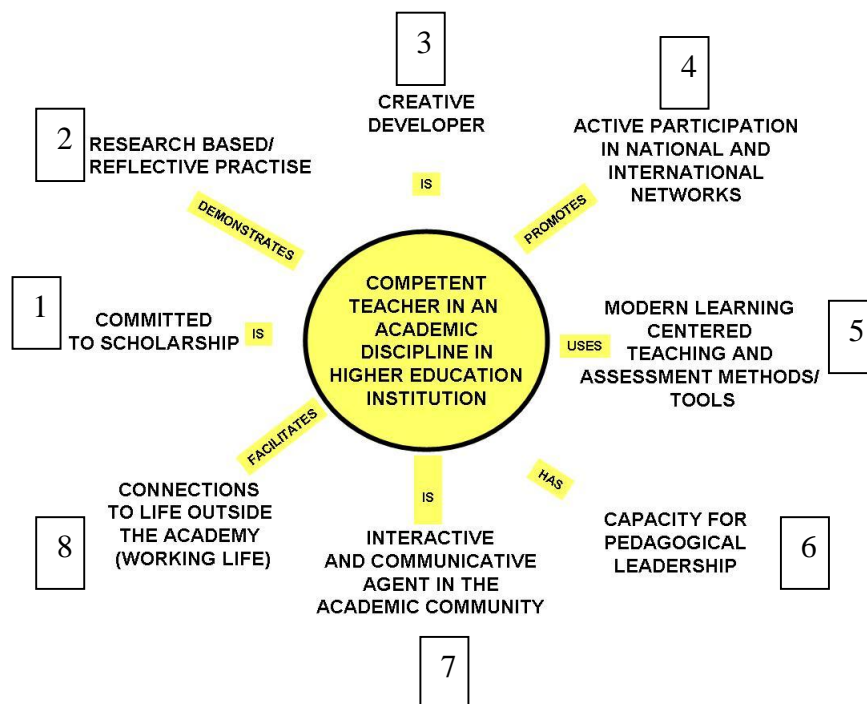


Figure 3. Higher education teachers' core competencies

The program was divided into seven modules:

1. teaching and learning in higher education (the core module, 11 ects)
2. introduction to educational sciences (10 ects)
3. practical training periods I (11 ects) and II (3 ects)
4. higher education institutions – codes of laws, statutes and practises (3 ects)
5. promoting a student's scientific thinking (3 ects)
6. special studies based on personal study plan (15 ects)
7. Higher education as a profession (4 ects)

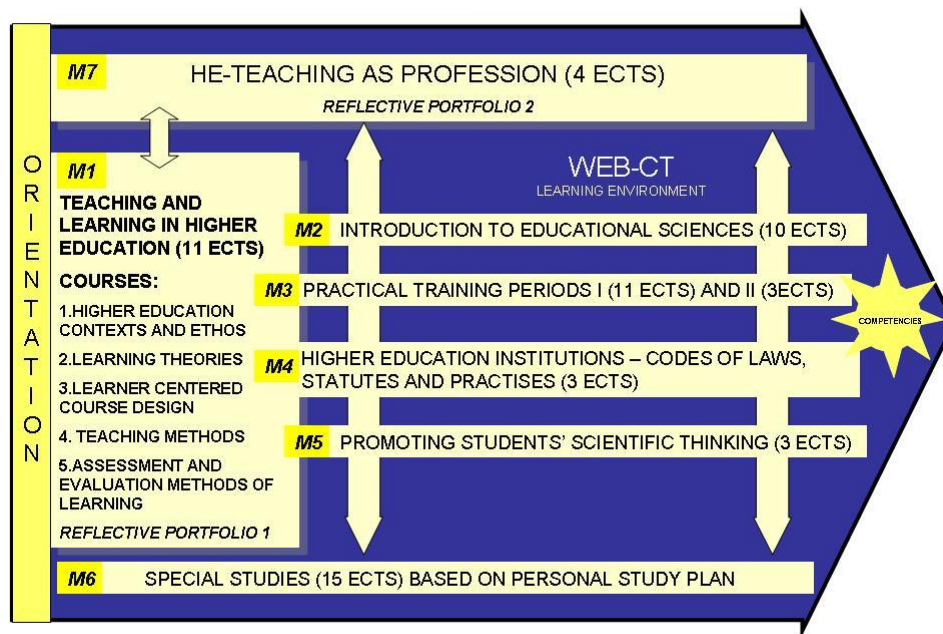


Figure 4. Program structure

Modules M1-M5 and M7 are compulsory for the students. M6 is based on students' free choice from a large supply for specialized items. Module 1 (M1) serves as an introduction to the entity of studies. It summarizes both theoretical and practical contents of the program. The module is delivered by six intensive one-day workshops at the beginning of the studies. M2 gives introduction to scientific pedagogical concepts. M4 guides students to become aware of the institutional and organizational context of the higher education. It helps to interpret the meanings of organizational cultures and studies both formal and informal as well as internal and external codes and regulations. M5 promotes teachers' competence to guide the development of students' scientific thinking and writing skills. Special weight is laid on the supervised periods of practice teaching (M3). Training period 1 takes place in the teacher's own department, where he/she plans and delivers one academic course to ordinary students. Each teacher has an academic mentor from his/her own department and also a pedagogical tutor from the School of Vocational Teacher Education. Practice teaching period 2 is carried out in some other higher education institution than the home institution. Thus the program offers chances to get experience of teaching in both the traditional university and applied sciences university.

In every module the teacher has to demonstrate his/her knowledge development by reflective written work. All assignments and tasks given during the modules or courses are meant to accumulate within the professional portfolio (reflective portfolio 2), which is also assessed as a final examination for the completion of the program. All course assignments are given, completed and assessed via electronic learning platform. The written feedback is given for every assignment, with the exception of Portfolio 1 which is evaluated both numerically and in writing.

The modules of the program cover the core competencies as the table below presents.

Table 1. Modules and core competencies

MODULES	COMPETENCIES *							
	1	2	3	4	5	6	7	8
TEACHING AND LEARNING IN HIGHER EDUCATION (THE CORE MODULE 11 ECTS)	x	x	x	x	x	x	x	x
INTRODUCTION TO EDUCATIONAL SCIENCES (10 ECTS)	x	x						
PRACTICAL TRAINING PERIODS I (11ECTS) AND II (3 ECTS)	x	x	x	x	x		x	
HIGHER EDUCATION INSTITUTIONS – CODES OF LAWS, STATUTES AND PRACTISES (3ECTS)			x			x		
PROMOTING STUDENTS SCIENTIFIC THINKING (3ECTS)		x			x			
SPECIAL STUDIES BASED ON PERSONAL STUDY PLAN (15 ECTS)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)
HIGHER EDUCATION AS PROFESSION (4ECTS)	x	x	x	x	x	x	x	x

* The pre-designed competencies are: 1. Should be committed to scholarship of the teaching and learning in his/her discipline and in the interdisciplinary scientific community, 2. Should demonstrate research-based and reflective practise, 3. Should possess creative approach towards challenges, 4. Should show and promote active participation in national and international networks, 5. Should be able to use modern and applicable learning centred teaching and assessment methods, 6. Should show positive attitude and possess skills towards taking responsible tasks as a leader and supervisor in his/her organisation, 7. Should be an interactive and communicative agent (of change) in the academic community and 8. Should be able and willing to facilitate profitable cooperation with life outside the university.

Alignments between both theory and practise and course activities (assignments, teaching methods, planning, evaluation and teaching practises) are the conjunctive mission for the teacher educators throughout the program. For instance, HE student teachers expect to be taught in the methods they are supposed to use in their teaching. They expect to be evaluated in the way relevant to their context in university, they are evaluated, given feedback and directed to peer evaluation in the way which will be applicable in their teaching work, and they are guided to use reflection and self-assessment as their tools in professional growth. These practical measures bring the pedagogical

thinking of a HE teacher evident. For that reason it is important to study the theoretical bases of practice first, and later learn to find reasons for choices in pedagogical theories.

The aim, method and target group of the preliminary research

The purpose of examining HE teacher students in the middle of their pedagogical project was to acquire knowledge about the effectiveness of the program so far, about the experiences concerning the contents, the usefulness of learning and teaching theories and their adaptability to the setting of HE teaching. The aim was also to gather information of and get acquainted with the student teachers' professional and identity developing processes when they were balancing between research and teaching.

To analyse and interpret the student teachers' essays and interviews phenomenographic approach was chosen. The target group (N=48), male and female university staff members had studied in the pedagogical program one year at the time of collecting the present research data. Two persons had already been given their diplomas, some were about to get finished after 13-14 months, a few intended to avail of the full study time of three years, while the majority was going to use still one more year for studies.

Results

Since the admission criteria to enter the HEAT-program were extremely severe and the admittance was not self-evident, the involvement was high. The criteria followed those of the Vocational Teacher Education law and statutes decreed by the Ministry of Education. The applicants were also demanded a valid work agreement with the university as an extra requirement. Despite the admission criteria, there were almost 100 HE applicants out of whom 50 were approved.

Participants have been very satisfied so far with the contents and organization of the studies. At the beginning phase they identified themselves as researchers and regarded teaching as an obligation. Only because university administration demanded them to teach, they wanted to learn the trade. A special need that they recognized in the beginning was the methodology: they wanted to learn more and better teaching methods as well as to add other good practices to their tool kit.

In the following, the first, preliminary results are presented under the division of personal growth and clarification of conceptions.

Steps towards personal growth as a teacher

During the contact teaching days the student teachers praised their multi-discipline group which let them learn about various practices in faculties and departments and led to fruitful collective reflection. They considered the contents of “work-shop” days balanced: right things at the right time in the right volume. Since the education now described is long-termed, it lets the student teachers recollect their earlier practices and make use of their earlier experiences as reflected. When added to the new theories and ideas, their experiences have been given meanings and their learning has accumulated.

Balancing between the demands of critical scholarship and planning how to teach as well as becoming more conscious of interacting with members of their community leads to **1) *better familiarity with laws, better understanding of situations and better planning*** of teaching. It also leads to “---unclothing the myth of teaching which should not be seen as straightforward but as the result of growth” (JL DMed)

Another student teacher learnt to understand that his audience consists of persons, not nameless faces. His teaching practice under the guidance and supervision of a mentor and tutor brought important notions of teaching as **2) *personal interaction*** between the teacher and students.

I could not understand beforehand how important it is to know the students you are going to teach. I had a concrete lesson of it in the Technical faculty. (MM M.Sc. Doctoral student, Technical faculty)

As another notable feature the student teachers mention the importance of feedback. **3) *Receiving evaluation and feedback*** from their peers, mentors and supervisors took place throughout the studies. For instance, student teachers’ demonstrations or mini-lectures were an integral part of the contents of the work-shop days. After each presentation the student teacher was given a written peer evaluation. Peer evaluations were also written of the learning portfolio (produced a month after the contact days). The tutor gave the numerical evaluation and written feed-back. A student teacher writes:

Since I have never before participated in any courses on performing in front of audiences, I have got only passing feedback from a few persons. Unfortunately, feedback on university teaching is given only in student sheets after courses. The critique from them never gives suggestions for improvement. They only mention things that were either painful or laudable. The feedback from Portfolio 1 was very useful for me regarding both its contents and presentation. Although in the world of science you are constantly evaluated according to your scholarship in money applications, you will seldom get any feedback except “yes” or “no” -answers. --- In addition, it was also useful to give peer feedback on

demonstrations and a Portfolio. Writing them made me think once again of my productions, and I compared them to the peer presentations. (MN, PhD Biochemistry)

Through the many measures taken in the program, the significance of teaching has begun to be opened to the student teachers. Although growth is never painless, and there appeared to be more to learn than expected, **4) *self-reliance, self-awareness and brave attitude*** have become obvious. The developing professional identity of a teacher has begun to enrich the earlier researcher identity.

Clarification of conceptions

The basic conception in this preliminary research suggests that learning simultaneously comprises cognitive, emotional and psychodynamic as well as social and societal dimensions. Cognition, emotion and society form the angles of a triangle which has learning in its centre. All the dimensions are always integrated in the learning process and in practice do not exist as separate functions.

Teaching. A model for understanding how teacher students conceive of learning is the surface – deep continuum. The surface approaches or conceptions include 1) remembering things, 2) getting facts and details, and 3) applying information.; while the deep views include 1) understanding new material for oneself without reference to rewards, 2) perceiving or understanding things in a different or more meaningful way, and 3) developing or changing a person (Entwistle 1997). Learning at all levels requires active mental processing of information, repetition, practice and memorization (Howe 1998).

The student teachers described the relationship of teaching and learning by saying that

...teaching is not reading aloud the study material in front of the audience – it is making people involved in the theme via a teacher's personal way (TP PhD Science.)

It is not either

...asking questions only because teachers usually do so – it is making people understand (not only know) the basic facts and become able to solve problems. (MA DMed Medical Faculty.)

All this does not happen by itself, but a teacher has to be able to choose the materials, methods, arrangements and so on." (JO PhD Educational faculty.)

Mental models are needed in conscious self-evaluation and reflection to lead to greater understanding of self and the profession as well as to link the knowing-in-action with previous

experiences which in their turn are possibly activated. In this article mental models are examined through learning conceptions, conceptions of human beings, epistemic conceptions and self efficacy conceptions.

Of their *learning conceptions* the student teachers write, in addition to what is quoted in the previous passage, that learning must be an active process, that knowledge is constructed through evidence and that learning is more effective when it involves collaboration:

I am taking progress in giving space to my students to learn themselves, i.e. I try to get rid of traditional behaviourism. It is interesting to notice that I have to confirm myself repeatedly that I am on the right path, to let students find information themselves.” (HK, PhD, Biochemistry)

In their *conceptions of human beings* they emphasize democracy and the equality of people: “It is very natural to me to interact with the students on equal terms” (NK MA Technical faculty).

Epistemic conceptions, information processing, analytical criticalness, problem solving skills, thinking skills and creativeness are highly developed concerning the student teachers’ own activities in their fields of science. In relation to their students, scientific knowledge has a central position, but the constructive principle of learning as a student’s own constructive process is often neglected. The conception of knowledge is

...finding a balance between generalists and experts. Since nobody can ever master anything completely, learning must be directed to understanding the phenomenon as a whole on one hand and knowing deeply a smaller part of it on the other. What the balance is like between general and expert knowledge depends on the situation, The most essential in this is that learning should aim at both understanding the whole and the processes of a chosen part, not remembering the facts by heart. (JO PhD Educational faculty)

Self efficacy or the *conception of personal mastery* has increased during the study months.

Actually, the student teachers have become conscious of their capabilities which were unclear to them earlier:

The most apparent feeling stays: the reliance on my own ability, the feeling that I can manage teaching without difficulties. At the same time the respect to a teacher’s work increased.” (HK PhD, Science)

The increase of self-knowledge was understood to be one of the great gains during the teaching practice period. Knowing oneself is the prerequisite of successful interaction with students, added

with the mastery of substance skills, knowledge of learning theories and situations as well as teaching skills in general.

The first experiences of teaching practice have made student teachers take many notions of the university settings of teaching. First, university students today are less mature and less independent than they used to be. Second, in HE there are inflexible structures in organizing learning and teaching. They would need reorganization by inside agents.

Since teachers are regarded reflective practitioners and professionals, they should be given enough autonomy over their work. (NK PhLic, Information processing science, Technical faculty).

The mentors and supervisors have been of great help in reflecting on both the processes and contents as well as on giving feedback of practical teaching situations. Thus the situations have become clearer and student teachers have been able to recognize the challenges ahead. Although they are well advanced in higher order thinking skills, their pedagogical thinking is not on the same level. They will need practical teaching experiences and time to reflect on them.

Conclusion

The piloting project will go on up to 2009. The experiences so far have brought many ideas to the actors. From the scientific view it would be important to make models of practical implementations based on theory. From the practical point of view the shared responsibility of both traditional university and university of applied sciences could be arranged on a stable cooperative basis and in it the experiences of this pilot project could be utilized.

1. It seems that student teachers have during the process adopted the view that teaching in higher education is a serious profession. It is irresponsible, sometimes unethical to teach without reflective teacher competences. They can most easily be achieved through systematic pedagogical teacher education.

2. It seems that one of the most important single items to learn has been the university legislation. It is astonishing how insufficient knowledge HE teachers have about higher education legislation and both national and institutional codes of action. This results in accepting an a-dynamic role inside the department or institution. Traditional university teachers believe for example that it is forbidden to use time for teaching development activities. They do not know that it is decreed in the act of university personnel that the first task of the university teacher is to improve HE teaching.

Getting familiar with the legislation and the official codes of action has given remarkable tools to teachers to promote development initiatives. It has also meant the growth of critical consciousness.

3. Student teachers have developed and started to reflect on different strategies how to promote change in their own departments. This may well illustrate the meaning of deep learning for the organizational change. 1) Informal strategy promotion can take place in coffee table discussions, for instance when talking of one's teaching practice experiences, delivering pedagogical material and references and creating new ideas with a colleague to start the snowball effect. 2) The formal strategy promotion presupposes activity in departmental/ institutional committees and teams. The departments/ units should enter strategic processes, quality assurance processes and participate in strategic planning. They should also be encouraged to participate in national teaching development activities as well as to encourage pedagogical leadership.

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