HRK German Rectors' Conference
Project nexus
Concepts and good practice in Higher Education

International Conference, January 20th/21st, Essen, Germany

Education and Training for European Teachers: Competence Models, Curricular Objectives and Harmonising Theory and Practice

Posters and Abstracts

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BertelsmannStiftung · CHE Centre for Higher Education · Deutsche Telekom Stiftung · Stifterverband für die Deutsche Wissenschaft

"The Standing Conference of the Ministers of Education and Cultural Affairs of the Länder in the Federal Republic of Germany" (KMK) establishes joint standards

16 "state"-specific laws

6 levels of teaching certification

3 stages of teacher education
1. Course of study
2. Practical training at teacher seminars and schools
3. Continuing professional development

There is *no* such thing as one *German teacher education system*!

The structures in teacher education in Germany are diverse and non-transparent!

Several number of subjects

Several types of schools, *not just levels of education*

120 higher education institutions involved in teacher education

➜ **Transparency is urgently needed!**
➜ **Monitor Lehrerbildung ("Monitor Teacher Education") tackles this problem and offers an overview over the heterogeneous structures.**

Objectives

- Enhance transparency
- Provide information at different levels
- Support fact-based discussions

Approach

- **Website**
  www.monitor-lehrerbildung.de
  Its data are obtained with the help of two surveys. Both, the 16 federal states and the identified higher educations involved in teacher training are asked to deliver the necessary data concerning the first stage of teacher education.
- **Brochures**
  A more in-depth look at specific topics is given in the brochures that are published approx. twice a year.
- **Newsletter**
  Topical issues are addressed with the help of a monthly, gratuitous e-mail newsletter.

The platform www.monitor-lehrerbildung.de presents more than 8.000 relevant facts and figures depicting the first stage of teacher education in Germany along nine key subjects.

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Monitor Lehrerbildung // "Monitor Teacher Education"

Due to its federal structure, Germany comprises sixteen states. Each of these states has its own constitution and is largely autonomous with regard to educational and cultural affairs. Furthermore, there are several different types of schools and according to this variety there are six different "levels of teaching certification". Moreover, each university can determine its curricula within the framework of the given state-specific political requirements.

Because of this, there is no such thing as "a German system" of teacher training. For this reason transparency is urgently needed!

The project "Monitor Lehrerbildung" closes this gap and presents an overview over the heterogeneous structures. Its objectives are to enhance transparency, provide information at different levels and support fact-based discussions.

The platform www.monitor-lehrerbildung.de presents more than 8.000 relevant facts and figures depicting the first stage of teacher education in Germany. Its data are obtained with the help of two surveys.

So far, all 16 states and 65 out of the 70 higher education institutions (HEIs) enquired have kindly taken part and delivered required data.

The nine key subjects are:

- entry of a course of study
- structure of the courses of study
- curriculum contents
- practical relevance
- mobility
- coherence and interlock of the three stages of teacher education
- teacher education as a part of HEI- and state-profiles
- allocation of responsibilities
- promotion of science and research as well as young scientists

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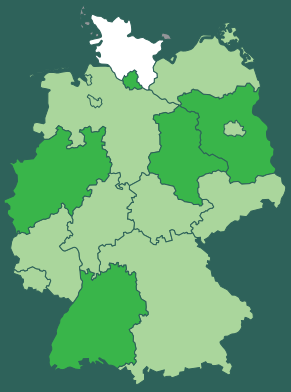
Practical relevance in teacher education

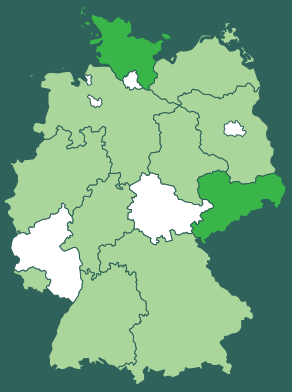
Statewide regulations for phases of practical training and practical semester/term in particular

- Internships during the first stage of teacher education are mandatory in ten states.
- Five states stipulate compulsory internships as well as a mandatory practical semester/term.
- In one state there are no statewide regulations



Statewide regulations for internships that take place outside the school system

- In nine states there are obligatory out-of-school internships for all student teachers.
- In two states the regulations vary according to the different curricula of the different certification levels in education.
- In five states there are no mandatory out-of-school internships.



Four central problems

- The model of teacher education's three stages entails problems of coherence and interlock.
- The comprehension of practical relevance is often too narrow; practical relevance is more than just the sum of internships.
- Teacher education as well as its practical relevance still do not get enough attention by politics and higher education institutions.
- We don't have enough empirical evidence on the question, which form of practical relevance is the most effective/suitable one?

Seven requirements for a better practical relevance in teacher education

- The quantity as well as the quality of practical relevance are crucial.
- All persons/institutions involved have to cooperate.
- Traditional structures have to be reviewed and changed if necessary.
- Students ought to receive individual feedback.
- Diverse opportunities to gain practical experience should be offered.
- All persons/institutions involved should be up-to-date with regard to the current scientific knowledge.
- The effectiveness of methods/activities concerning practical relevance should be scientifically proven.

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Practical relevance in teacher education (selected findings of „Monitor Lehrerbildung“)

One major and often discussed issue in teacher education is its practical relevance.
Therefore, it is one of the nine key subjects Monitor Lehrerbildung analyses.

Some results:
State-wide regulations for phases of practical training and for a practical semester/term vary.
Internships during the first stage of teacher education are mandatory in ten states.

five states stipulate compulsory internships as well as a mandatory practical semester/term.
In one state there are no state-wide regulations.

The number of stipulated phases of practical training varies between two and five, according to state-specific laws, the different levels of teaching certification and different degrees.

The 16 federal states also have different regulations for internships that have to take place outside of the school system.
In nine states there are obligatory out-of-school internships for all teacher-to-be students.
In two states the regulations vary according to the different curricula of the different certification levels in education.
In five states there aren't any mandatory out-of-school internships.

In order to enhance the practical relevance in teacher education there are seven requirements that can be identified.

Survey data delivered by the federal states (updated in summer 2013) and of the higher education institutions (summer 2012)

1. The quantity and quality of practical relevancies are crucial.
2. All persons/institutions involved have to cooperate.
3. Traditional structures have to be reviewed and changed if necessary.
4. Students ought to receive individual feedback.
5. Diverse opportunities to gain practical experience should be offered.
6. All persons/institutions involved should be up-to-date with regard to the current scientific knowledge.
7. The effectiveness of methods/activities concerning practical relevance should be scientifically proven.

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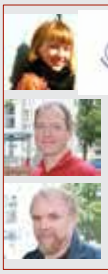
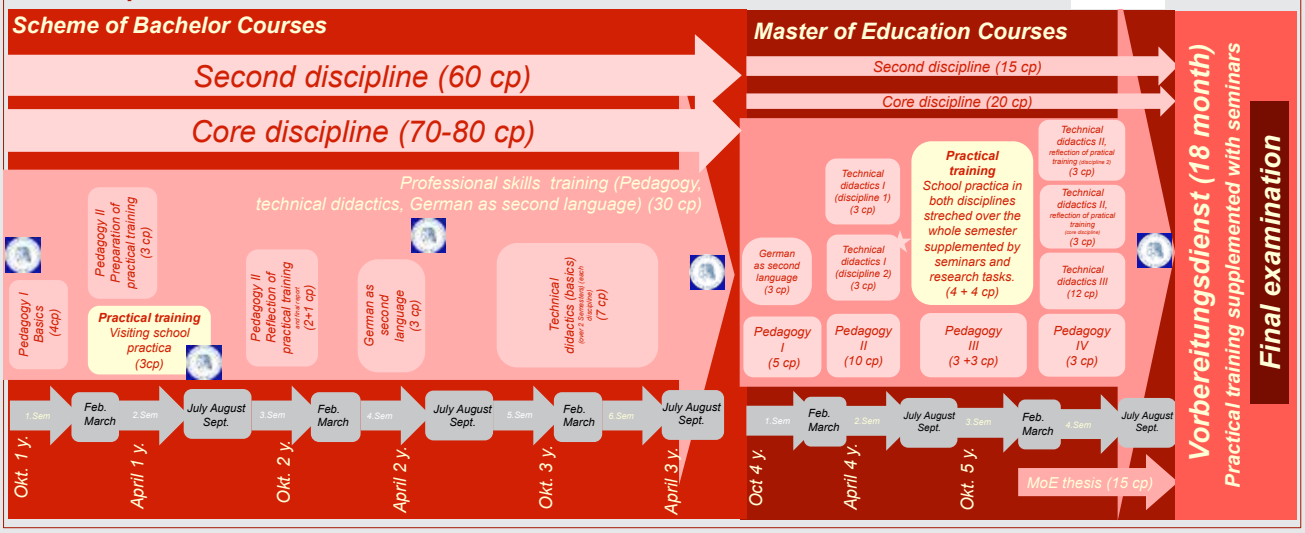


Structure and distinctive features of teacher education system in Berlin **Teacher education in Berlin is currently under re-construction, but will be in general a three step process. Students start with a Bachelor course (6 Semester, 180 Credit points) combining two disciplines (e.g. Mathematics and Physics) already containing modules in technical didactics and pedagogics (app. 15 %). Basically these BA courses are polyvalent and offer the possibilities to enter a Master of education program in order to continue with step 2 of teacher education or to step out of teacher education. The Master of education course (4 Semester, 120 credit points) still contains discipline oriented modules (app. 25 %) but the amount of training in professional skills sum up to at least 75 %. The third step of teacher education is an 18 month training period („Vorbereitungsdienst") in school, which is a necessity to finalize teacher education but is ruled by school administrations outside of the responsibility of the university. The practical training period is complemented by further seminars under the auspices of school administration.** *Some courses like primary school pedagogy will be organized slightly differently.*

University is not the main responsible institution but involved into facultative further education of teachers by individual professors or academic staff members.

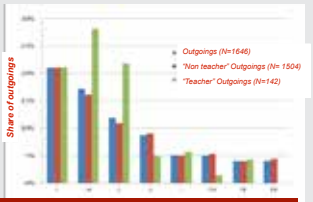


Specific projects, measures and approaches

In spite of the obstacles and in order to enforce internationalisation in teacher education Humboldt-Universität zu Berlin

- **Has established a highly international research network in pedagogy and technical didactics, which already influences the Master of Education course by international experts as lecturers (e.g. guest professors etc.).**
- **Constantly promotes the practical training in foreign countries by offering a pre-structured admission to certain practical trainings at partner institutions.**
- **Has established a workshop named *Study and Teach Globally* specifically for first and second semester students in teachers education.**
- **Has gathered the international incoming students who are going to become a teacher in order to establish specific melting-pot courses. Humboldt-Universität zu Berlin has app. 600 incomings each winter turn and app. 10 % of these students are going to start teachers education after their BA studies.**
- **Supports transnational courses in teacher education, e.g. theatre pedagogical methods for French language teaching in schools.**
- **Constantly promotes pedagogical exchange service (Pädagogischer Austauschdienst) as further practical training in foreign schools between BA and MA courses or after MA course.**
- **Discuss *further education* as option to combine international teachers and students.**

In order to find exchange opportunities Humboldt-Universität zu Berlin has compared the teachers education systems of these European countries. Due to the different time schemes in teacher education regarding professional skill training, mobility as a "teacher student" is hampered.



Currently ERASMUS-mobility of Humboldt-Universität zu Berlin students is clearly predominated by three target countries (France, United Kingdom, Spain). Especially "teacher students" are focussed on these countries.

(data basis from HU academic years 09/10, 10/11, 11/12)

Due to the difficulties to exchange students as students in teacher education, students are mobile in most cases as students of their core discipline. Incoming students (BA) are also not exchanged as students in teacher education but as students of their disciplines.

Conclusion: **Highly structured and determined courses, like teacher education, emphasise the responsibility of the university to arrange mobility passageways by agreements with partner institutions in teacher education. Furthermore, the university has also to foster the spirit of internationalisation by tiny, but trend-setting steps at home using early information, transnational co-modules, melting-pot experiences with foreign students, lectures and foreign teachers in order to come to know strangeness of European teacher education and school systems but also to perceive the treasure of difference in teaching in a multicultural society.**

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Teacher education at Humboldt Universität zu Berlin

The distinctive feature of teacher education in Berlin is the three step process. Students start with a Bachelor programme (6 semesters, 180 credit points) combining two disciplines and already containing modules in technical didactics and pedagogics (app. 15 %).
Step 2 of teacher education is the Master of Education programme (4 semesters, 120 credit points), where the amount of training in professional skills sums up to at least 75 %.
The third step of teacher education is an 18 month training period („Vorbereitungsdienst") in school, which is governed by the school authority.

In a highly structured and determined programme like the education of teachers, universities are obliged to arrange mobility passageways by agreements with partner institutions.

Furthermore, the university also has to foster internationalisation by trend-setting steps at home using transnational co-modules, and melting-pot experiences in order to become familiar with the diversity of different school systems in Europe, but also to perceive this diversity as a chance in teaching a multicultural society.

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Occupational Field Relation and Aptitude as a Matter of Assessment and Counseling for Teacher Trainees

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GOETHE UNIVERSITÄT FRANKFURT AM MAIN

STARKER START ins Studium

ABL AKADEMIE FÜR BILDUNGSFORSCHUNG UND LEHRERBILDUNG

Structure of Teacher Education Courses in Hesse

The Idea of Teacher Aptitude in Germany

Teacher aptitude has high importance for the profession itself and the teacher-training-system. The role of teachers is challenging and requires professional competence, high number of motivation, social competences and mental toughness. Mayr (2012) outlines these and other aspects of personality characteristics, that have high importance for later professional satisfaction, pedagogical action competence and resilience in occupation.

For that reason it is of vital importance that university applicants for teacher training have these basic requirements available at the beginning of their studies as well as sufficient understanding of the professional requirements. Additionally, the future teachers need occasions for repeated reflection about their professional aims, preferably against the background of professional field experience. In 2013 the Standing Conference of the Ministers of Education and Cultural Affairs of the Länder in the Federal Republic of Germany (Kultusministerkonferenz) published recommendations for aptitude assessment in university teacher training, where practical experience combined with self-assessments and accompanying career counseling are mentioned as pivotal factors. That ties on previous advice of authors like Nieskens (2013), who recommend related aspects for acquiring "good teachers" for the future.

Practice Teaching in Germany

- In most of the teacher degree studies various practice teaching sessions at schools aim to give an insight into teacher's perspective and provide the idea of self-reflection.
- These practical phases are a critical component of the induction of student teachers into the profession. They make necessary connections between theory and practice, support professional and personal growth and provide professional development.
- **The problem** is that there is no thematic connection between these practical phases, so the idea of self-reflection in combination with practical experience in the professional field can not be realized sufficiently.
- **The need** is to tap the full potential of the practical phases, connect them with theory and demonstrate the chances of these practice learning opportunities for individual reflection of vocational aptitude.

Project Aims

It is obvious that the appraisal of one's aptitude for the teacher profession needs to be build upon a combined model of self-reflection, counseling and practical experience.

- Guided by this rationale, teacher degree studies have to create appropriate learning opportunities. In doing so, university can combine theory- and research-based concepts and instruments with possibilities that are connected with practical experience.
- Therefore this project aims to sustain self-reflection before starting and during the studies combined with extension of feedback-culture and mentoring especially during practice teaching.

Occasions, Approaches and Measures at Goethe-University

Secondary School Exam & Phase of Orientation

Attraction, Counseling and Self-Discovery

- **"Back to School?"** → One-day information and counseling event for prospective students
- **Career Choice Fairs** → student recruitment events, connecting professionals from different programs of studies and professions, e.g. "Main Study" a career choice fair at Goethe-University
- **Career Counseling for Teachers** (CCT) → Online-assessment tool with a portfolio of informative texts and self-discovery techniques for school leavers, students, beginning teachers and experienced teachers

"Finally "Back to School?" was the last confirmation for me to study in Frankfurt and to study teacher education." (Participant)

"I think this test is a good idea for all who don't feel certain about teaching to be the right profession, as well as for those who feel certain about it, because it can confirm or open eyes if necessary." (CCT-User)

Begin of Studies & 1./2. Semester

Counseling, Self-Discovery and Professional Feedback

- Comprehensive **information booklet** for first semester containing information about the whole study
- **Welcome week** for first semesters → Structure of studies, essential acadamic planning, study organization and requirements
- **Teacher's corner**: role play and simulation workshop for first semester → experiential learning and idea of sensitization for requirements of the profession, plus establishing a culture of feedback

"Counseling service was really extensive and very good." (First Semester)

"Teacher's corner should be compulsive, to my mind it is a very important workshop for first semesters." (Participant)

Pedagogical and Didactic Practice Teaching (2./3. Semester)

Self- and External Assessment, Professional Feedback

- To assess the first teaching experience and give students a professional feedback, a formal mentoring system based on a web-based assessment tool (Fit-L) was developed and implemented
- Fit-L supports a corporate evaluation and helps to name strengths and weaknesses and frame development potentialities for students
- For the application and embedment of this tool into the feedback-process a special didactic training is provided for mentors at schools and university lecturers supervising students during practice teaching
- The training contains systematic feedback methods and the application of the assessment tool Fit-L

Lessons Learned & Conclusion

Participant surveys show high contentment and approval of attendees and users for the several depicted offers. Nevertheless there are some aspects limiting the achievement of program objectives:

1.Voluntariness of participation leads to a positive selected sample of participants.
→To reach the whole target group some measures should be provided with **obligation** for all students (e.g. online self-assessments like CCT, use of self- and external assessment in practice teaching sessions), some should be equipped with **incentives** for participation (e.g. counseling events), for instance by inclusion as elements of curriculum

2.Structural embedding of the measures into academic procedures demands high degree of coordination with a range of departments, persons and partners outside university (e.g. teachers, school board staff etc.).
→ Measures should be institutionally established by **stabilization of cooperation** between concerned departments

First-year students as well as graduates differ in personality characteristics, competences and learning biographies. By offering a set of different, but thematically connected measures, these variety of individual needs can be considered at best.

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Occupational Field Relation and Aptitude as a Matter of Assessment and Counseling for Teacher Trainees

Research shows that not everybody who has the ambition to become a teacher can show the basic personal requirements to perform this profession successfully.

Based on this research, different self-discovery and assessment procedures as well as counseling ideas have been developed.

They aim to support graduates and teacher education students on their reflection on choice of study, their aptitude and their professional development.

Our project ties on this aims with a special focus on self-reflection before starting and during the studies combined with extension of feedback-culture and mentoring especially during practice teaching.

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TUMconnect Project

funded by Stifterverband and Nixdorf Foundation

Academic teacher education in connection with teacher induction and professional development

Prof. Dr. Tina Seidel, Jennifer Apel, Martina Jerabek, Angela Krapp
TUM School of Education

Background Information

Teacher education in Germany is characterised by a strong segmentation of training stages (academic teacher education, teacher induction, further professional development).
In the past years numerous reform processes have been initiated for all these three stages, yet they often failed to connect effectively but co-exist.

Aims and objectives

Specific integration of all acting parties involved in teacher education and the schools within the context of career orientation, facilitating networks along the training stages and establishing continuous professional development (CPD) for teachers at TUM School of Education in close collaboration with their partners.

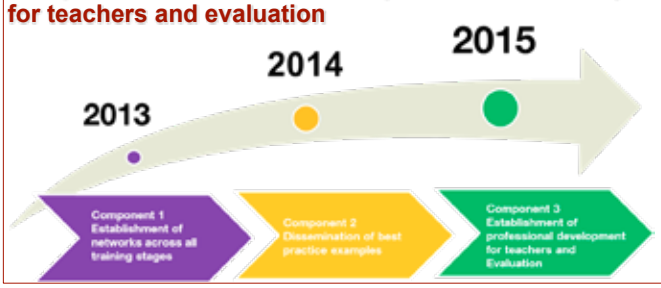
Description

The following three aspects are going to be converted within the project scheme:

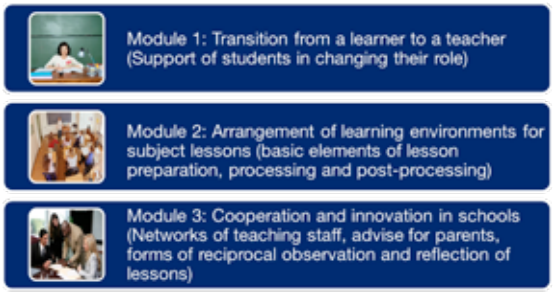
Component 1: Establishment of network structures that link the different stages as well as institutions of teacher education and also enables the exchange and implementation of a commonly accepted concept

Component 2: Dissemination of adequate working methods in order to secure coherent training across all stages of teacher education ("best practice")

Component 3: Establishment of professional development for teachers and evaluation



The networking groups develop products and examples, which are oriented on three problem-orientated modules:



Conclusion

TUMconnect focuses on fostering coherent development across all stages of teacher education by effectively linking academic teacher education with the second training stage, teacher induction at schools as well as approaches to continuous professional development.

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TUMconnect - Academic teacher education in connection with teacher induction and professional development

Teacher education in Germany is characterised by a strong segmentation of training stages (academic teacher education, teacher induction, further professional development).
In the past years numerous reform processes have been initiated for all this three stages, yet they often failed to connect effectively but co-exist.
The TUMconnect project funded by Stifterverband and Nixdorf Foundation is evaluating the current situation within the network of TUM School of Education and their partner schools in the context of the present discourse on 'improving the quality of teacher education'.
Best practices focusing on fostering coherent development across all stages of teacher education by effectively linking academic teacher education with the second training stage at schools as well as approaches to continuous professional development will be identified and interventions initiated.

A main purpose of the project is a specific integration of all acting parties involved in teacher education and the schools within the context of career orientation, facilitating networks along the training stages and establishing continuous professional development for teachers.

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Bridging the gap – a practice orientated workshop program for teacher education students

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A lack of practice – the two phase model of the German teacher education

Federalism is a special/ particular characteristic of the German political system. Many policies are exclusively a matter of the federal states ("Länder"). Nevertheless there is some degree of standardization. In terms of teacher education, the federal states share a **basic principle: a theory based university education and an induction program** ("Pädagogischer Vorbereitungsdienst"), a practical school-based teacher training, leading to the second and final state examination, the "Staatsexamen". During the theoretical part of the teacher education at university, initial practical experiences are gained through two internships at a school, each one for five weeks. Those practical school trainings, provided by universities, which is cooperating with regional schools, is rarely evaluated in an adequate way for individual students. Furthermore, there is no thematic connection between the practical experiences gained during the two internships (Merzyn 2004). Later on, during the induction program, the teacher trainees work at school and teach their own classes independently. Evaluations of their teaching skills are made by observing special prepared lessons – a high challenge for most student teachers, who are expected to display a high level of professional development at this time. The development of practical skills, however, is not being fostered sufficiently before then.

Conclusion:
The stage of professional education is altogether characterized by **a lack of opportunities to learn and perform in the prospective work field**, the school itself, or in relevant basic practical skills for that field.

Project aims

The Academy for Educational Research and Teacher Training (ABL) is as a subject-specific neutral facility between all departments that are involved in teacher education at Goethe-University and therefore interconnected with all relevant participants in university teacher education. Serving as the central institution for teacher training at the Goethe-University, it offers support for this gap between theory and practice by providing **a special practice-orientated workshop program exclusively for teacher education students**, the "PRO-L- Workshops" (L stands for Lehramt and refers to the teaching profession).

The workshop program

The program, containing about 12 - 15 workshops, is offered each semester. The workshops are half-day, full-day or two-day events, taking place alongside regular lectures. **Participation is voluntary and free** of charge and all participants receive a certificate upon completing the course. In the implementation and start-up phase in the years 2009 - 2011 the program was conducted in cooperation with several partners at the university, such as the general soft-skills-department. Today the PRO-L workshop program is operated exclusively by the ABL.

PRO-L Workshops für Lehramtsstudierende

Research based topics

The topics are selected according to job demand analysis derived from research in teacher education (Schaarschmidt 2005) as well as catalogues of professional standards of teaching like those published by the Standing Conference of the Ministers of Education and Cultural Affairs of the Länder in the Federal Republic of Germany ("Kultusministerkonferenz") in 2004. Based on that rationale, there is a variety of different topics:

- Classroom Management – How to manage classrooms
- Communication skills for teachers
- Time and self-management
- Intercultural competences for teachers
- Management of vulnerable children
- Voice training and speaking skills

- Since 2009
- 12-15 Workshops each Semester
- 12-16 participants per Workshop
- approx. 150 participants per Semester (i.e. cases)
- about 1.000 participants since the beginning in 2009

Award: "Good Practice-Award"
by NEXUS monthly newsletter of German Rectors' Conference

Quality management and evaluation

There is a standardised system of accompanying evaluation, both regarding quality management and achievement of objectives. For that reason each workshop is assessed from the participants' perspective by filling in a questionnaire. Results show an overall high quality of implementation, achievement of intended learning effects and a good response from the target audience (see Box "Evaluation Results").

Skill-training

Considering the overall objective of fostering basic teaching training skills during university studies, there is a strong emphasis of practice and „doing". That means each workshop comprises specific competences relating to the topic that can be exemplified and trained. An important feature is the engagement of high-skilled and qualified trainers, mostly recognised as experts in the topic.

"I feel better prepared for my internships."

"I appreciate the realistic situations giving me new options to interact in the classroom."

"The trainings are very useful. It's the best addition to my theoretic studies."

Evaluation Results

- from routinely participant surveys of winter 2012/13 and summer 2013 (n=235)
- **all scales range from 1 (positive) to 6 (negative)**
- reported as: mean (standard deviation)

Reason for Participation
- Topic seems important for success in studies: 3,7 (1,8)
- Topic seems important for success in occupation: 1,2 (0,4)

Quality of Implementation
- Various Indicators (structure, didactics, participant orientation etc.): 1,5 (0,6)
- Overall Quality Rating: 1,4 (0,4)

Learning Effects
- Perceived achievement for success in studies: 2,1 (1,4)
- Perceived achievement for success in occupation: 1,3 (0,4)

Lessons Learned & Conclusion

In reference to the great number of participants and the positive evaluation of the workshops, it is safe to say that the PRO-L Workshops are a successful program. It can be regarded as an effective measure for bridging the gap between theory and practice in teacher education at university. Nevertheless not all students have the opportunity to participate due to **limited capacity**. Professional trainers are required to **ensure high quality of training** but create a need for more funding, which is uncertain.

We suggest: As the participation at the program is voluntary, it can be assumed that we only attract the high motivated students. Those in need for support in practical skills may not participate. In order to allow both more students in general and students at all teaching skill levels to participate in the program, an **embedding into the curriculum** seems strongly recommendable.

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Bridging the gap - a practice orientated workshop program for teacher education students

In university teacher training initial practical experiences of individual students are rarely evaluated, and mostly there is no thematic connection as well (Merzyn 2004).

After university, in the induction program, teacher trainees work at school and teach their own classes independently, where they are expected to display a high level of professional development.

But the development of practical skills is not being fostered sufficiently during the years of study.

The "PRO-L- Workshops" is a practice-orientated workshop program for teacher education students at university, helping them to develop basic practical skills for the prospective work field, the school itself.

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Project Classroom Management: Combining theory and professional practice in academic teacher education

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UNIVERSITÄT DUISBURG ESSEN
Offen im Denken
Bundesministerium für Bildung und Forschung
Bildungsgerechtigkeit im Fokus

Background Information

The German Federal States decide independently on the structure of their education systems. In general, teacher education in Germany is divided into two phases (cp. KMK 1997). In the following, we especially refer to the federal state of North Rhine-Westphalia (NRW).

Phase 1: Academic teacher training at university
The first phase of the academic teacher training in NRW takes place at university (for further information, please compare for example www. http://www.uni-due.de/biwi/). Here, the future teachers experience an academic preparation for their profession.
Duration: The duration of the academic teacher training is connected to the newly introduced bachelor and master programmes. In order to acquire a bachelor degree, students need to study 3 years (6 semesters). A master's degree is the requirement to become a teacher. Therefore, students need to study another 2 years (4 semesters) in order to achieve their master's degree.
Content: The main focus of the first teacher training phase lies on the subject-specific acquisition of knowledge. A teacher in Germany needs to study at least two subjects, such as for example, mathematics and English. Educational knowledge and practical experience still plays a subordinate role in the context of academic teacher training at university. Practical experience is gained in the course of several internships taking place at different schools. Universities throughout Germany are currently trying to improve their policies by integrating more institutionalized practical experience into academic teacher training programs.

Phase 2: Teacher traineeship at the Centres of practical school training and at school
The second phase of the teacher education in NRW takes place at so-called centres of practical school training and at school.
Duration: This phase currently has a duration of 1,5 years after its reformation in August 2011. During their teacher traineeship, future teachers already work at school and are furthermore accompanied by educators focussing on their didactical and methodological teacher skills (Kolbe & Combe 2008). Teacher traineeship includes 9 hours of independently taught lessons. At least 5 more hours each week are taught under the supervision of professional teachers. The traineeship is accompanied by theoretical seminars led by special supervisors. Furthermore, regular classroom observations take place which are intensively supervised.
There is an individual feedback opportunity after each classroom observation which is meant to foster learning and teaching improvement (for further information, please compare http://www.schulministerium.nrw.de/ZBL/Wege/Vorbereitungsdienst/). Phase 2 leads to the Second State Examination which allows individuals to work as a teacher in Germany.

State of the art
Research has shown that especially the first phase of teacher education, taking place at university, is often viewed as lacking in practical relevance. That is one reason why the second phase of teacher education is regarded more positively and is rated as being more important and relevant for teacher education by future teachers, although it is still in need of revisions. (cp. Terhart 2007). Terhart (2007) criticizes that sometimes first and second phase of teacher education seem to be like different worlds; the first phase referring to theory only, whereas the second phase often only relates to practical experiences lacking theoretical frameworks.
Important educational skills focusing on classroom management are very seldom taught in both phases, but a lack of the conveyance of relevant concepts can especially be found during the first phase of teacher education. Empirical research suggests that students especially miss out on the acquisition of competencies concerning social skills and classroom management skills (cp. Bölting & Thomas 2007, Kolbe & Combe 2008, Speck, Schubarth & Seidel 2007).
A very interesting problem and a field of research which still lacks empirical data is the connection of the merely theoretical first phase of teacher training and the second phase. Integrating practical aspects into the first academic phase of teacher training, the combination of practice as well as theory and the combination of both phases in general is seen as one of the main challenges for improving German teacher education at the moment (cp. Hascher 2006, Kolbe & Combe 2008).

The project Classroom Management
Our project tries to work on the criticism concerning the lack of practical relevance in the first phase of academic teacher education. We have therefore developed and are currently implementing a program which explicitly tries to combine the areas of theory and practice and furthermore focuses on the question, how future teachers may best acquire competencies in classroom management and social skills needed at schools.

Description

The project Classroom Management helps students to acquire theoretical foundations for classroom management and to apply this knowledge in exercises and role-plays during one semester. In the subsequent semester, which is the implementation phase, the participating students will have the chance to experience the everyday school practice and to practice the classroom management techniques learned. In addition to the lessons in the implementation phase, they regularly receive detailed feedback.

Theoretical foundation
"We define classroom management as the actions teachers take to create an environment that supports and facilitates both academic and social-emotional learning. In other words, classroom management has two distinct purposes: It not only seeks to establish and sustain an orderly environment so students can engage in meaningful academic learning, it also aims to enhance students' social and moral growth. From this perspective, how a teacher achieves order is as important as whether a teacher achieves order." (Evertson & Weinstein, 2006, S. 4).

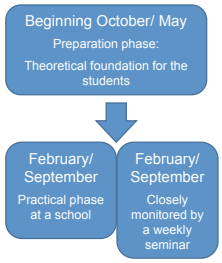
The Classroom Management project aims to systematically train teachers as early as possible in this competence. Hattie (2009) concludes on the basis of numerous studies that lectures are far less effective than events, which include practice, theory and feedback through video and audio recordings.
An optimal interaction design includes, according to Hattie, especially the ability of teachers to act non-directive, to be empathic, warm and encouraging. The latter are characteristics of teacher behavior, which are also helpful for the social-emotional development of students (Steins, 2011; Haep & Steins, 2011).Research shows that without an awareness of the emergence of emotions and knowledge of the consequences and regulation possibilities of those, students and teachers are not able to solve complex conflicts.
Therefore, a central focus of the training content lies on the development of competencies to be able to self-reflect critically and to implement alternative ways of thinking and behaving.

Preparation phase: Theoretical foundation for the students
Seminar Topics:
First learning unit "environmental factors"
Classroom management skills to enable the students to build and maintain optimal learning environments for their students.

Second learning unit „teacher – student interaction"
This unit builds the core point of the training concept. Students learn the basics of social interaction. Analogous to the theoretical model of rational-emotive behaviour therapy those are divided into event-perception-interpretation-evaluation sequences in preparation for the introduction to the rational emotive education principles.
Third learning unit "conveying the students"
The overarching aim of the third learning unit is that the students build cross-connections to the previously learned skills through further scientific concepts of self-analysis and behaviour change with respect to a constructive interaction design.

The preparation for the practice phase is done through exercises and role-plays. In addition, students get to know the teaching unit „social learning". It is taught in the implementation phase in their own responsibility within a team.

Practical Phase: Make practical experience - teach social learning
The practice phase of the Classroom Management course takes place at one of our partner schools. This enables students to enhance their skills in Classroom Management in small groups and everyday situations. They work with adolescents and children from different partner schools (3rd grade elementary school and 7th grade comprehensive school, each in deprived areas). The teaching unit social learning is taught via team-teaching by the students for two lessons per week, one half of the school year. They are closely accompanied, get a theoretical foundation, are observed in school life and receive a feedback based on clear criteria and filmed sequences.
The project offers an extraordinary opportunity to experience school routine in a closely monitored way and to practice effective classroom management techniques already during the academic teacher education.



The project beginns twice a year.

Conclusion

Experiences in the above presented project which aims at combining theory and practice in early academic teacher education contexts show, that especially the future teachers view their practical experiences as valuable and as a good preparation for their teaching career. Negative experiences include the need for high resources, such as time, in order to accompany the students closely enough. The combination of theory and practice, or, in other words, the productive fusion of university and school is not the easiest goal, but definitely one that is worth it.

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„Education and Training for European Teachers – Competence Models, Curricular Objectives and Harmonising Theory and Practice"
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Project Classroom Management: Combining theory and professional practice in academic teacher education

Our project is based on the state of the art regarding teacher education which states, that academic teacher training lacks practical relevance.

The project tries to react to this criticism. We have developed and are currently implementing a program which explicitly tries to combine the areas of theory and practice and furthermore focuses on the question, how future teachers may best acquire competencies in classroom management and social skills needed at schools.

In this project, future teachers acquire theoretical classroom management skills first, which they then use by regularly teaching at a partner school. Experiences show, that especially the future teachers view their practical experiences as valuable and as a good preparation for their teaching career.

Team

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Cumulative Acquisition of Research Competence in Teacher Education

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Background Information

Despite the fact that education in Germany is decentralized, there are some aspects that characterize German teacher education in general. Trainee teachers, for example, are educated in two phases. While the first phase is organized at university, the second phase takes the form of two years practical training at teacher seminars and training schools; these two distinct phases have lead to what is generally referred to as a theory-practice gap. Moreover, teacher education in Germany is, to a certain extent, based on subject didactics, which are autonomous academic disciplines linked to the corresponding subjects and to the teaching practice.

Integrating Theory and Practice in Application-Oriented Research Projects

At Humboldt-University empirical research as a student learning concept is seen as a way to integrate theory and practice in teacher education during the first phase. As practice periods provide particular opportunities to conduct field studies, research oriented learning is especially tied to these periods in the study program.

Practical components of teacher education at Humboldt-University comprise a first practicum designed to explore the professional field as well as two teaching practice periods. While doing their first practicum, Bachelor-students are supposed to relate scientific theory to teaching practice based on an educational research question.

The two teaching practice periods that are part of the Master of Education have, so far, focused on the acquisition of teaching competence, whereas research competence has not played a significant role. In establishing a practical semester more emphasis is placed on enabling trainee teachers to assess and develop lessons based on empirical evidence. Building on the research skills students already have acquired during their first practicum, the practical semester aims at further developing students' research competence. Furthermore, students are asked to reflect on the impact theory and practice may have on their understanding of teaching as a profession, thus gradually developing a learning and questioning attitude towards their teaching practice.

Take-Home Message

Trainee teachers should be empowered to identify effective teaching practices based on empirical evidence. This requires a curriculum that promotes the cumulative acquisition of research competence as part of a long term quality enhancement in higher education.

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Cumulative Acquisition of Research Competence in Teacher Education

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As practice periods provide particular opportunities to conduct field studies, research oriented learning is to be especially tied to these periods in the study program.
However, the two teaching practice periods that are part of the Master of Education have, so far, focused on the acquisition of teaching competence, whereas research competence has not played a significant role.

In establishing a practical semester more emphasis is placed on enabling trainee teachers to assess and develop lessons based on empirical evidence.
Building on the research skills students already have acquired during their first practicum, the practical semester aims at further developing students' research competence.

Furthermore, students are asked to reflect on the impact theory and practice may have on their understanding of teaching as a profession, thus gradually developing a learning and questioning attitude towards their teaching practice.

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Pre-service teacher training in real school projects: Science Fairs with E-Mentoring

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virtual science fair Deutschland

Background Information

Germany is a small country with 16 states. Each of the 16 states has its own educational system. There are big differences including students´ age at the beginning of school, length of primary school, the classroom hours per week and much more.

Some aspects about the German teacher training system:

- **All teachers are trained at universities.**
- **However, the study differs from state to state and from university to university.**
- **All teachers have lifelong positions.**
- **There is no requirement for in-service teacher training.**
- **Teachers have studied at least 2 subjects and pedagogy, psychology and education.**
- **Most study plans at universities include internship in schools.**
- **At some universities an internship outside of school is required.**
- **The teachers are trained regarding their chosen type of school: primary school, different types of secondary schools, vocational school.**
- **There is a lack of teachers in mathematics and science.**

Description

This project started in Germany 4 years ago. What happens during a Science Fair with E-Mentoring? Middle school students think about a suitable research question that arises out of their personal interest in the given overall theme. In their investigations, they follow all steps of a scientific investigation. In the forum (moodle platform), they report about their ideas, their planning progress as well as critical considerations. Using calculations, photographs, plots, drawings they keep the e-mentors posted regularly. The e-mentors (pre-service teachers) offer support, encourage and motivate the students. They help them to improve their projects. The dialogs between students and pre-service teachers are a useful source for didactical and educational discussions in seminars at the university. Many educational aspects can be discussed on the real dialogs which were written in the moodle forum. You get insight in students thinking processes as well as in the educational qualification of pre-service teachers. You can improve teacher training in a very individual way and based on real situations (dialogs). The projects helps also to improve so called „soft skills“ of pre-service teachers, they feel responsible for their team and help and support them continiously over a time period of about 8 weeks.

Students decide on their own research question and plan the investigation → **Students carry out their investigations at home and keep their e-mentors posted** → **Ongoing support by e-mentors in the forum of the platform** → **Presentation of results as *Lab report + Display***

Statement / Conclusion / Lessons learned / Take-Home Message

This project is an extraordinary example for an individual, modern and school related way of teacher training. Using new communication technologies is not only „up to date“ and motivating, it is a must for todays education as well as in schools as in universities. It makes cooperation very easy and effective and is oriented on the business world of today and tomorrow which is full of collaboration – also about long distances. This projects works in international dimensions and the results are excellent for all participants. It really is a win-win situation for schools and universities.

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Pre-service teacher training in real school projects: Science Fairs with E-Mentoring

SCIENCE FAIRS ARE EXCITING, hands-on, competitive-collaborative ventures that remain in the memory of middle school students for a very long time.
Most American schools conduct traditional science fairs each year, but only a very few schools in Germany.

Utilizing the powerful online tools provided by Moodle™ interactive software, a "virtual" science fair with student projects hosted online with digital images has been developed. Pre-service science teachers serve as "e-mentors" and help and support the middle school students.

The classroom teachers, middle school students and pre-service teachers work together to develop a collaborative model for using technology to improve students' skills in science inquiry activities.
The pre-service teachers are actively involved in a real school project and are responsible for their team.
Many aspects of didactics, education and also subject matter can be discussed in university classes by reflecting the dialogs written at the moodle platform.
Science fairs with e-mentors are a new type of science fair that reflects today's reality: the age of (long-distance) communication and collaboration.

Team

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Teachers' tasks and responsibilities in inclusive schools – implications for teachers' training

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Background Information

Changing the school system to an inclusive system is related to new and challenging responsibilities for all teachers. Teachers' training must communicate the necessary competences for all teachers.

Current state of research in Germany

4 empirical studies

authors	participants	method
Reiser (2001)	3 SNE teachers and 3 social workers from a center for students with social and emotional behavioral disorders	interview
Moser, Schäfer & Jakob (2011)	No description	videobased observation
Weiß, Kollmanns-berger & Kiel (2013)	220 teachers of all school types (not regarding inclusion)	Group discussion
Currently Moser and colleagues are conducting a study for the description of teachers' tasks in inclusive settings		

Current state of international research

Systematic literature review of empirical studies
(Melzer & Hillenbrand, 2013, Melzer et al., 2014)

- Tasks and responsibilities described for GE teachers (6 studies)
- Tasks and responsibilities described for SNE teachers (14 studies)
- Methods: quantitative (e.g. questionnaire) and qualitative (e.g. interview) research

Result of the literature review:
a list of frequent teachers' tasks and responsibilities in inclusive settings

Description of the study

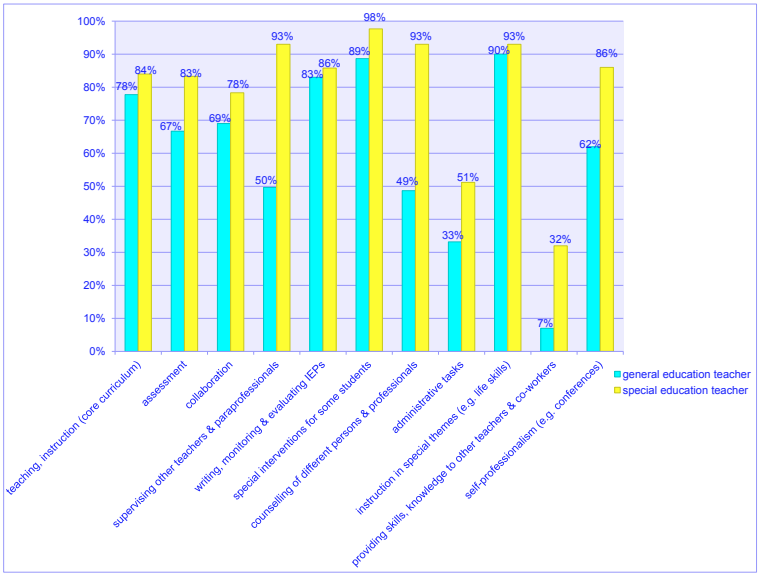
Research Question: What tasks and responsibilities are related to several teachers' jobs in inclusive schools?

Design: Survey

Instrument: Questionnaire with 33 tasks and responsibilities in 11 fields
Base: list of tasks and responsibilities in inclusive settings (literature review)

Participants: 43 teachers in 5 inclusive primary schools in Berlin,
29 GE teachers,
14 SNE teachers

Results: Figure 1 shows the percentage of occurrence in the fields of responsibilities in inclusive settings



Implications for teachers' training

Pre-service primary teachers' education:

–Instruction in special needs education (SNE)
–IEPs
–Collaboration

Pre-service SNE teachers' education

–Assessment
–Supervising and counselling colleagues
–Self-professionalism

Training for teachers in training (Vorbereitungsdienst, preparation service)

- Mentoring systems: experienced colleagues with the *same* professionalism leading teachers in training

In-service training

- Topics: Assessment, collaboration, evidence-based interventions in inclusive settings
- Specific and overall in-service training for the different professions (exchange & transfer in practice)

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Teacher tasks and responsibilities in inclusive schools – implications for teachers' training

Tasks and responsibilities for teachers in inclusive settings are rarely described in German and international research. A literature review of international studies results in tasks and responsibilities in 11 fields. The poster shows first results from a survey with a questionnaire based on the literature review in five inclusive schools in Berlin. The survey was aimed at the description of tasks and responsibilities of primary GE teachers and special education teachers. Results show that there are similar task fields but also crucial points. Similar task fields may be teaching, writing IEPs, and collaboration. Crucial points for special education teachers may be assessment, supervising and counselling colleagues and paraprofessionals, providing knowledge, and self-professionalism. Thus, teachers' training programmes should provide a preparation in these task fields.
For all teachers, collaboration in multi-professional teams is a necessary condition.

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Transnational Courses - internationalization@home in Teacher Education - Examples and Visions

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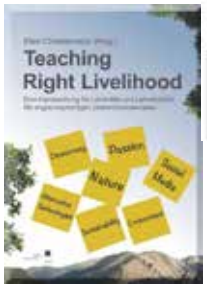
Transnational courses are a chance to introduce international spirit to teacher education and are often an impetus to stimulate students in thinking about the possibilities of studying and teaching globally. We collected five examples from German universities including Humboldt Universität zu Berlin:

Teaching Right Livelyhood (Universität Kassel)

Starting with the idea to take the alternative nobel prize (Right Livelihood Award) as topic setter, Ellen Christoferatu and her colleagues at the University of Stockholm developed a blended learning course (a mixture of e-learning and presence learning) together with German and Swedish students, combined with an excursion to Sweden to meet alternative nobel prize winners (DAAD funded). As a result a book was published presenting the curricula material developed within the course.
As a further result, the idea was spread over several departments at the University of Kassel and a working group continues to extend the teaching format.

http://www.uni-kassel.de/hrz/db4/extern/dbupress/publik/abstract.php?978-3-86219-370-7



Bildung ohne Grenzen – Teacher Excursions (Universität Würzburg)

Via 10-14-days excursions in European neighbour states students get an insight into the school and teacher education system of the visited country in order to collect stimuli and new perspectives for their own education and later on for their own professional praxis. The excursions are combined with block seminars (4 days) regarding the school and teacher education system of the visited country. Furthermore a series of guest lectures about education in Europe is held at university Würzburg during the semesters (BMBF funded).

Excursions to date: Padua/Italy, York/England, Dundee/Schottland, Salamanca/Spain, Umea/Schweden, Opava/Tschechien, Caen/France.

http://www.phil2.uni-wuerzburg.de/forschungsprojekte/lehrprojekte/programm_zur_internationalisierung_der_lehrerbildung/

"International teacher education laboratory - Inclusion" (Universität Köln)

The Cologne concept regarding inclusion combines a presence seminar with a relevant amount of blended learning elements using the platform ILIAS. Students can communicate via ILIAS, allowing the integration of foreign partners and of students, who are currently abroad. Furthermore students can document learning success by the e-portfolio functionality of ILIAS. The seminar is supplemented by topic-related excursions to Finland and an individual consultations for internship (Berufsfeldpraktikum) in foreign countries, where partners are involved in the Cologne concept regarding inclusion (e.g. Canada, Scotland, Finland). (DAAD funded)

Contact: Bettina Amrhein (University Bielefeld), Maike Krinke (University Köln)

Theatre Methods in French Language Teaching (Université de Nantes, Universidad de Valencia, Universität Rostock, Humboldt Universität)

A conventional seminar develops into a melting pot of students from four universities sharing methods of language teaching and self-awareness by practicing theatre for language teaching. In the seminar different theatre pedagogical methods are evaluated with respect to technical didactics of french language teaching in schools. Theatre allows to address cognitive, affective, and motivational aspects of language learning. The academic occupation within the seminar feeds into annual theatre festival of the Université de Nantes (France) where four student groups (Nantes, Rostock, Berlin, Valencia) meet to share thoughts about their own particular seminars in workshops and to play theatre in order to estimate analysis within a holistic self-experiment. (BMBF funded via university´s bologna.lab)

Contact: Jens Liebich (Université de Nantes), Katharina Wieland (Humboldt Universität)

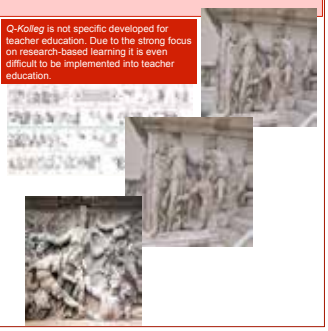
Q-Kolleg (Humboldt Universität)

A Q-Kolleg (Q-Colloquium) is a team of students of Humboldt Universität and an international partner institution, working together on independent research projects within a specified subject area. An international team consists of eight to twelve students („fellows") who are recruited through the participating departments.
A Q-Kolleg takes place over the course of two semesters, involves fellow visits at each partner university and exchange by video-conferences and concludes with a student conference, where the results of the respective research projects are presented at Humboldt Universität. Within this thematic framework, the international teams develop their individual research questions. (BMBF funded via university´s bologna.lab)
The pilot phase of the Q-Kollegs started with a cooperation of the Winckelmann-Institut für Klassische Archäologie and the Department of Classics at the University of Nottingham. Twelve students in total from Berlin and Nottingham worked together on the topic „Methods of Image Studies in Classical Archaeology".

Contact: Christoph Klose (Humboldt Universität)

http://bolognalab.hu-berlin.de/projekte-des-bologna.labs/q-programm/q-kolleg

Q-Kolleg is not specific developed for teacher education. Due to the strong focus on research-based learning it is even difficult to be implemented into teacher education.



Conclusion: Highly structured study programmes like teacher education rely on the responsibility of the university to arrange mobility passageways by agreements with partner institutions in teacher education. Furthermore, the university has also to foster the spirit of internationalisation by small, but trend-setting steps at home using melting-pot experiences with foreign students, lectures and foreign teachers. Transnational courses can combine e-learning (e.g. student video-conferences and use of social media platforms) and presence learning elements like excursions and fellow visits. The mixture of elements can sum up to a truly international teaching format.

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Translational Courses - internationalization@home in Teacher Education - Examples and Visions

The university can foster the spirit of internationalisation by tiny but trend-setting steps at home using early information, excursions, transnational co-modules, melting-pot experiences with incoming international teacher students, foreign lecturers and teachers of foreign schools.

Transnational courses can blend e-learning and presence learning with excursions and mutual visits. Furthermore, they can introduce student video-conferences and social media platforms. The mixture of elements can sum up to a truly multinational teaching format. Thereby those courses are a chance to introduce international spirit to teacher education and are often an impetus to stimulate students in thinking about the opportunities of studying and teaching globally. We describe five examples from German universities including Humboldt Universität zu Berlin.

Team

Humboldt Universität zu Berlin, Germany
bologna.lab/Int. Office

Johannes Moes, Jasmin Franken & Johannes Siemens
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FUMQua (Freie Universität Berlin – Mentoring Qualification)

Harmonizing theory and practice during student teachers` practica

Diemut Ophardt, Franziska Pfitzner-Eden
Center for Teacher Education, Freie Universität Berlin

Specific features of the German and Berlin teacher education system

- Two phases: (1) 5-year university program including practica at schools (2) 1,5 year practical induction
- National competence standards (Standing Conference of the Ministers of Education and Cultural Affairs) but differing organization of processes at federal level (e.g. Bachelor/Master vs. State Exam, differing practicum models)
- Extensive federal reform projects (e.g. Berlin: introduction of a **practicum semester** into Master of education)

Master of Education in Berlin (2004-15)

Professional Studies	Subject 1	Subject 2

4 week practicum (Semester 2)

4 week practicum (Semester 3)

Reformed Master of Education in Berlin (from Oct 15)

Professional Studies	Subject 1	Subject 2

6 months practicum semester (Semester 3)

Features of the future Berlin practicum semester:

- 3-4 days at school, 1 day at university
- Mentors at schools are crucial to integrating practice and theory
- Mentors are to be qualified by university-based trainings

Theory and practice contribute to knowledge integration

Teaching expertise is based on knowledge integration (Leinhardt et al., 1995)

- Integrating **domains** of knowledge: Content knowledge (CK), pedagogical content knowledge (PCK) and pedagogical knowledge (PK) (Shulman, 1986)
- Integrating **forms** of knowledge: declarative & procedural, theoretical & practical

Student teachers integrate knowledge by applying the **design cycle** (Yinger, 1980)

- Planning and lesson design: **preactive** teaching
- Managing and improvising: **interactive** teaching
- Reflection-on-action: **postactive** teaching

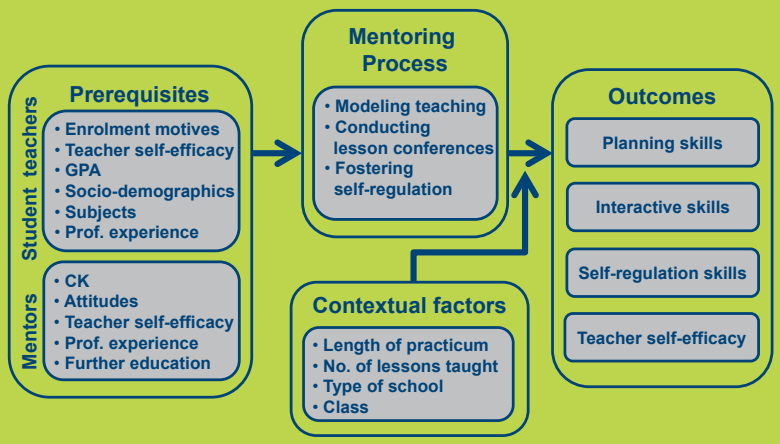
Mentors are crucial to student teachers` learning outcomes

- Mentors relate students' theoretical knowledge and practical experience plus their own expert knowledge (West & Staub, 2003)
- **Lesson conferences** should focus on the design cycle and **co-constructive dialogues** (West & Staub, 2003)
- **Content-focused coaching** (Kreis, 2012) proved to be an effective approach for conducting lesson conferences

FUMQua Training for Mentors (pilot starts in Feb 2014)

1. PCK (3h)
2. PCK (3h)
3. Content Focused Coaching (6h)
4. PCK (3h)
5. German as a 2nd language (3h)
6. Classroom management (3h)
7. Content Focused Coaching (3h)

Intervention Model



How can the FUMQua-pilot contribute to a Berlin wide training for mentors?

- Implementation of the training can only succeed as a joint project of university, school and state
- Evaluation and continuous refinement of the training are crucial to keep up high quality standards
- Trainers must be recruited and guided by a professional train-the-trainer-system with a participatory approach

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Harmonizing theory and practice during student teachers` practica

In order to link theory and practice more effectively, teacher education in Berlin is about to be reformed by introducing a 6 months practicum as part of the Master of Education. Studies on teacher expertise point out that student teachers need to integrate different domains and forms of knowledge by applying the design cycle (preactive, interactive and postactive teaching).
During practica mentors may contribute to student teachers' knowledge integration by conducting lesson conferences which focus on the design cycle and co-constructive dialogues. The FUMQua training for mentors is based on the approach of Content-focused Coaching. Mentors learn to foster knowledge integration by guiding effective lesson conferences. The intervention model evaluates prerequisites of student teachers and mentors, aspects of the mentoring process, contextual factors and learning outcomes.

Team

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PrimA – Praktikum im Ausland

Harmonising Long-Term School Placements and a Stay Abroad for Future EFL Teachers

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Bergische Universität Wuppertal

BERGISCHE UNIVERSITÄT WUPPERTAL

PRAKTIKUM IM AUSLAND!

Overall structure of teacher education in Germany (NRW)

BA in 2 subjects + educational sciences (1st year | 2nd year | 3rd year) → MEd in 2 subjects + educational sciences (1st year | 2nd year) → Teacher training (18 months)

+

Compulsory stay abroad – challenges for EFL teachers

Curricular challenges

- absence of a window of mobility
- absence of credit points

Requirement according to the Teacher Education Act 2009
Lehrerausbildungsgesetz NRW

three-month stay abroad

Organisational challenges

- finding and financing accommodation
- finding appropriate occupation

The PrimA window of mobility – addressing the challenges

1st | 2nd | 3rd semester | 4th semester = stay abroad | 5th semester | 6th

Preparatory class
- allocation of placements in schools abroad
- intercultural training
- preparation for lesson planning and teaching
- support for organising the stay abroad
- benefitting from returning students' experiences

teaching in one of 27 schools

email

working on lesson plans with their lecturer

participating in school life

skype

preparing coursework on teaching approaches

Follow-up class
- reflecting on teaching experience (written paper)
- reflecting on intercultural experience
- completing the module (up to 20 credit points)
- sharing experiences with outgoing students

www.anglistik.uni-wuppertal.de/studium/ausland/prima

The PrimA module

… provides a window of mobility within the BA course.
… makes up to 20 credit points available to students.
… combines intercultural learning, language learning and professional development for future EFL teachers.

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PrimA – Harmonising Long-Term School Placements and a Stay Abroad for Future EFL Teachers

Teacher education in Germany comprises three phases: The BA in two subjects (6 semesters); the Master of Education in two subjects (4 semesters); in-school teacher training (18 months).
During their BA studies students preparing to become foreign language teachers are required to undertake a three-month stay abroad, an obligation that poses both curricular and organisational challenges for students. These challenges are fully addressed by the PrimA module, which opens a window of mobility within the BA course. Before and after the foreign stay students attend preparatory and follow-up classes; they also submit assignments digitally during their stay abroad, enabling them to acquire up to 20 credit points. Combining a stay abroad with their BA course offers future EFL teachers valuable opportunities, in immersing themselves in the day-to-day life of their placement schools, for professional development, intercultural learning, and the chance to increase proficiency in their target language.

Team

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Extracurricular Science Labs for MINT Teacher Education

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Background: Extracurricular Science Labs

DLR_School_Lab: 10 Years of Expertise

In the past decade a growing lack of engineers, natural scientists, information technology experts and mathematicians has been noted especially in Europe. Corresponding to the need to attract young people to science and technology, numerous extracurricular science labs ('out-of-school-labs') have been established, especially in Germany. One of these initiatives is the DLR_School_Lab Oberpfaffenhofen, operated by Germany's national research center for aeronautics and space, DLR, and a typical example of such an out-of-school-lab. It offers hands-on experiments for secondary school classes, advanced teacher training and, as a special feature, enrichment courses for gifted students.
DLR is Germany's national research center for aeronautics and space. Its extensive research and development work in Aeronautics, Space, Energy, Transport and Security is integrated into national and international cooperative ventures. As Germany's space agency, DLR has been given responsibility for the forward planning and the implementation of the German space program by the German federal government as well as for the international representation of German interests.
DLR operates twelve extracurricular science labs, one of which is the DLR_School_Lab Oberpfaffenhofen. This school lab offers to secondary school students high-tech experiments based on the core research areas and technology fields of the DLR institutes in Oberpfaffenhofen as well as the authentic research atmosphere of a large-scale research center. The students experience the fascination of aerospace research and become acquainted with a number of fields as well as with the working methods of high-technology research. The DLR_School_Lab presently offers 13 experiments in which students can become acquainted with infrared, laser, and radar technology, environmental remote sensing, meteorology, satellite earth observation data, satellite navigation, robotics, telepresence, virtual mechanics, research flight operation, mobile rocket research, and geodesy. Since it opened in 2003 more than 21,000 students have conducted experiments in the context of DLR_School_Lab Oberpfaffenhofen.

DLR_School_Lab Experiment	DLR Institute
Infrared Technology	Remote Sensing Technology
Laser Technology	Physics of the Atmosphere
Radar Technology	Microwave Technology and Radar Systems
Environmental Remote Sensing	German Remote Sensing Data Center
Weather and Climate	Physics of the Atmosphere
Satellite Data Analysis	German Remote Sensing Data Center
Satellite Navigation	Communication and Navigation
Robotics	Robotics and Mechatronics Center
Virtual Mechanics	Robotics and Mechatronics Center
Flight Team Simulator	Flight Experiments
Mobile Rocket Basis	Space Operation
Telepresence	Robotics and Mechatronics Center
Tunnel Boring Machine	TUM Geodesy/Remote Sensing Technology

Didactical Concept: IBSE

The most appropriate teaching style is Inquiry-Based Science Education (IBSE), corresponding to ‚Discovery Learning' – developed by Martin Wagenschein more than half a century ago. It comprises

- Self-regulatory learning and research by the students
- Self-management and self-organisation by the students
- The teacher's role changing from director to supporter of the school students

Evaluation of Extracurricular Science Labs

A scientifically and methodically comprehensive evaluation study was performed by the Leibniz Institute for Science Education at the University of Kiel, Germany, in the framework of a PhD thesis by Pawek (2009) in order to quantitatively assess the effectiveness of four DLR_School_Labs located in Berlin, Göttingen, Köln and Oberpfaffenhofen. The analysis proves that the laboratories can even have a positive influence on the only slowly changeable dispositional interests of adolescents. In sum, the out-of-school-labs successfully promote the interests of adolescents on different levels and in various ways, particularly since all effects are still verifiable even weeks after attending the laboratories. Therefore, they make an important contribution to promoting young talents and safeguarding the future of our society. These new findings partly go far beyond the results of earlier studies.

Expertise: Teacher Education

Advanced Teacher Trainings: 2.000 Teachers

The DLR_School_Lab Oberpfaffenhofen offers advanced training courses for teachers in order to prepare them for the visits of their classes. The main objective of the teacher training is to help them to integrate the extracurricular activities into their standard curricula and, thereby, generate an application-oriented concept for classroom education. The DLR_School_Lab offers special courses for teacher groups from individual schools, for regional teacher groups, and for the advanced training of Bavarian seminar teachers, i.e., the instructors of future teachers.
The key elements of such a teacher training are self-contained experiments, where the teacher adopts the role of a student and experiences the same feeling of success when completing an experiment. The experimental work is complemented by didactic as well as scientific background information about the respective experiments and research areas, i.e. the teachers also learn how to connect the experiments to the school curriculum.
Since 2003 about 2,000 teachers have attended advanced teacher training courses at the DLR_School_Lab Oberpfaffenhofen. The general feedback from teachers is positive, especially with respect to independent accomplishment of high-tech experiments, technical advancement, and stimulation for practical classroom teaching. Several of them were motivated to visit the DLR_School_Lab Oberpfaffenhofen with their classes. These requests have led to the situation that this school lab is presently fully booked for two years in advance.
The feedbacks of the teachers show a high (close to 100%) acceptance of the overall concept of the courses, the quality of presentations and organization, and the competence of the instructors. The usefulness of the courses for school lessons is assessed more critically by about 20% of the teachers. Because the experiments are defined by research topics and not by the school curriculum, the high acceptance of 80% was higher than expected.

Advanced teacher training 1: Working with field spectrometer

The Teacher's New Role

Beyond their traditional responsibility for knowledge transfer teachers have to adopt an new role and completely change of their instruction style:

- Initiators of research activities,
- Providers of resources
- Facilitators of the initial (learning) process
- Translator between scientists and students
- Organizers and mediators of research projects
- Coach
- Consultant
- Assessor of achievement
- Furthermore, they should be able to change their teaching style according to the specific situation

Elements of Advanced Teacher Trainings

A typical advanced teacher course at an extracurricular science lab (such as the DLR_School_Lab Oberpfaffenhofen) comprises:

- Overview of state of the art research
- Presentation of the experiments and their link to ongoing research activities at the institutes
- Overview of didactical concept – links between experiments and curriculum
- Self-experimentation (one or two example experiments) – the teacher in the role of a school student
- In-depth information about ongoing research (by scientists)
- Recommendation of transfer to practical school lessons
- Didactical and scientific material, web links, literature

Advanced teacher training 2: Building an model aircraft

Vision: Teaching-Learning-Lab

Utilization of science lab experiments as a platform for MINT teacher Education:

- Specific teaching-learning situation in the science lab
- Limited number of experiments/science areas
- Practical teaching experience with small groups of school students
- Multiple repetition of the same situation (so called microteaching)
- Extended time frame (2 – 4 hours)
- Lack of pressure to perform (no exam situation)
- Immediate feed-back by school students
- Development and creation of (new) didactical concepts

Strong interaction between scientists and teachers ⇔ science and didactics of experiments
Science labs as essential part of MINT education system

Vision #1: **Integrated teacher education concept for professional teachers, teacher trainees, and university teacher students**
Vision #2: **European perspective: Science labs as platforms for international exchange of expertise**
Vision #3: **Science Lab = Teaching-Learning Lab**

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Extracurricular Science Labs for MINT Teacher Education

The DLR_School_Lab Oberpfaffenhofen, operated by Germany's national research center for aeronautics and space, is an extracurricular science lab intending to attract young people to the MINT disciplines: It offers hands-on experiments for secondary school classes and advanced teacher trainings.

Its evaluated concept is based on high-tech experiments, the competence of scientists and university students supervising the school students, and the ambience of an aerospace research site. Furthermore, the DLR_School_Lab's didactical concept is based on the most appropriate teaching style - Inquiry-Based Science Education (IBSE).

The expertise gained in the past ten years is based on secondary school classes with more than 20,000 students and advanced trainings for more than 2,000 teachers.

The DLR_School_Lab is an ideal environment for MINT teacher education at university level: In the near future it is intended to implement this concept as part of the physics teacher education at the universities in Munich.

Team

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Didactics of Biology

Developing pre-service biology teachers´ diagnostic and teaching skills with regard to biological models

Sarah Lena Günther, Jennifer Fleige, Annette Upmeier zu Belzen & Dirk Krüger

Background Information

Model competence forms part of the aspect content knowledge which deals with the way in which scientific knowledge develops (Shulman 1986). In biology education, models are often used as a medium to transmit information, visualizing the structure and function of the original. That models could be a tool for scientific inquiry is a prominent view in science but not in the classroom (Grosslight et al. 1991, Trier & Upmeier zu Belzen 2009).
Based on a theoretical framework of model competence (Upmeier zu Belzen & Krüger 2010; Table 1) we successfully developed trainee teachers' model competence (Fleige et al. 2012) but not their diagnostic or teaching skills. This was evident as their students did not develop model competence consistently.

Aims

This project aims at developing a pre-service biology teacher training program investigating learning cases (Levin 1995) as a tool for instruction in order to foster...
...pre-service biology teachers´ model competence.
...pre-service biology teachers´ diagnostic and teaching skills for model competence.

Furthermore, the study serves to evaluate the case method as a tool that can be used by instructors to foster the described competences.

Description of the study

Process

The study is being conducted in three major steps (see Figure 1):

(1) Pre-service biology teachers´ model competence is improved by the application of an evaluated program (Fleige et al. 2012).
(2) Pre-service biology teachers analyze learning cases with regard to fostering model competence.
(3) Pre-service biology teachers develop and teach lesson units which foster students´ model competence.

The pre-service biology teacher training program contains elements which foster content knowledge and pedagogical content knowledge. By using learning cases, this study combines theoretical and practical elements.

Learning cases

Learning cases are detailed, contextualised, narrative accounts of teaching and learning (Levin 1995) containing problems and dilemmas of real-world lessons that form the basis for discussion aimed at finding possible alternatives.
The learning cases constructed for this study each describe a biology lesson with the focus on fostering students' model competence (Excerpt; see Figure 2). They deal with problems created according to a catalogue of criteria that are said to help foster model competence (Fleige et al. 2012):

- not enough lessons with focus on model competence
- missing reflection in the lessons
- competence level in students´ answers not correctly identified by the teacher
- too many aspects of model competence taught in one lesson
- lesson focuses on content rather than on scientific inquiry
- content is not easily accessible

Table 1: Theoretical framework of model competence
(Upmeier zu Belzen & Krüger 2010)

	Level I	Level II	Level III
Nature of models	replication of the original	idealized representation of the original	theoretical reconstruction of the original
Multiple models	differences between model objects	different foci on the original	different hypotheses about the original
Purpose of models	describing the original	explaining investigated relationships	predicting connections between variables
Testing models	testing the model object itself	comparing the model with the original	testing hypotheses about the original with the model
Changing models	correcting errors in the model object	revising the model due to new findings about the original	revising the model due to falsification of hypotheses about the original with the model

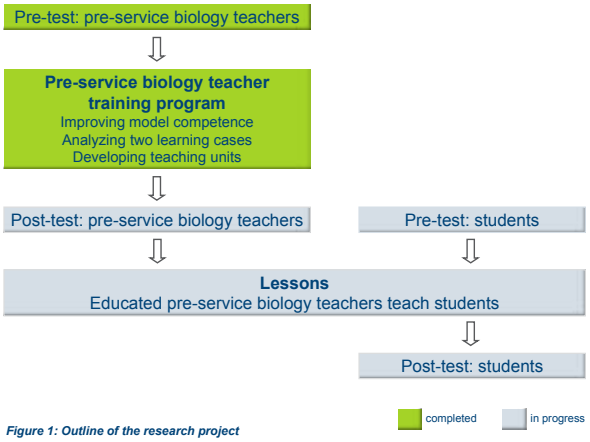

Figure 1: Outline of the research project

In this lesson students build their own plant cell model.


Student model of a cell

Excerpt from a dialogue:

Teacher: *Take a look at our models and decide to what extent they resemble real plant cells.*
Student 1: *Our models are built like the original cell. They are very similar but there are also some differences.*
Student 2: *Our models are much bigger and of different material.*
Teacher: *Yes, that is correct, but we can't be sure.*

Figure 2: Excerpt from a learning case. As highlighted in red, students' answers remain on level II (nature of models). They don't refer to assumptions or hypotheses (see Table 1).

Pertinence of the study

The German education system requires students to have an elaborated model competence as part of their scientific literacy (KMK 2005). Teachers, therefore, face the challenge of promoting their students' model competence. Fleige et al. (2012) revealed that, for this purpose, an elaborated model competence of the teacher is not enough. One can conclude from this that there is a need to improve pre-service biology teachers' diagnostic and teaching skills.

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Developing pre-service biology teachers´ diagnostic and teaching skills with regard to biological models

Using models for scientific inquiry is one of the aims in biology education (KMK 2005). In general, models are often used as a medium to transmit information by visualizing the structure and function of an original. That models can be a tool for scientific inquiry is a prominent view in science, but not in the classroom (Grosslight et al. 1991, Trier & Upmeier zu Belzen 2009).
To foster students´ model competence successfully (Upmeier zu Belzen & Krüger 2010), teachers need to have professional teaching competencies (pedagogical knowledge (PK); content knowledge (CK); pedagogical content knowledge (PCK); Baumert & Kunter 2006, Shulman 1986).
This project aims at developing, testing, implementing and evaluating a pre-service biology teacher training program with regard to the described teaching competencies. This program contains three major elements: First, the pre-service biology teachers' model competence (CK) is improved by the application of an evaluated program (Fleige et al. 2012).
Second, by investigating learning cases (Levin 1995) as a tool for instructing, we intend to foster pre-service biology teachers´ diagnostic and teaching skills (PCK) for model competence.
Learning cases are detailed, contextualised, narrative accounts of teaching and learning (Levin 1995) containing problems and dilemmas of real-world lessons.
The pre-service biology teachers have to analyze learning cases, which intend to foster students´ model competence. Afterwards, they have to find possible solutions to the presented problems. The learning cases constructed for this study describe a biology lesson, each with the focus on fostering students' model competence. They deal with problems created according to a catalogue of criteria that are said to help foster model competence (Fleige et al. 2012).
Lastly, the pre-service biology teachers develop and teach lesson units which foster students´ model competence to consolidate the pre-service teachers' CK and PCK.

The development of the pre-service teachers' teaching competencies will be evaluated with a pre-post-follow-up design using different measurements. To examine the effects of the learning cases, there is also a control group that is instructed without the use of learning cases.

On the poster you will find an overview of the project displaying the theoretical framework and an outline of the research project, as well as an excerpt from a learning case.

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Against the transition shock – Physics teachers education at Bonn University

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universitätbonn

Background Information

Structure and distinctive features of national teacher education system

University (1st phase)

Bachelor of Arts / Bachelor of Science

Master of Education

Subject 1 (Science + Didactics)

Subject 2 (Science + Didactics)

Educational Sciences

Training at school

Referendariat (2nd phase)

18 months at school under supervision

Advanced Training (3rd phase)

Individual activity, depending on teacher's initiative

Description

University (1st phase)

„Simulating" school in combination modules of science and didactics:

Lectures + Exercises (together with physics students)
- Electrodynamics (1st year Bachelor)
- Optics / Atomic physics (2nd year Bachelor)
- Nuclear / Particle physics (3rd year Bachelor)

+

Seminar (only physics-teacher students)
- Connecting subject matter of university and school
- Developing and testing teaching ideas in peer group
- Identifying challenges for typical topics

„Teaching-Training" modules in out-of-school location Physikwerkstatt Rheinland:
- Supervision of visiting physics courses (preparation, execution; 1-day event)
- Supervision of physics courses visiting during „Projektkurs" (preparation, execution of selected experiments/topics in close collaboration with physics teacher; about 10 occasions distributed over 1 year)
- Supervision of „Facharbeit" (3 – 5 occasions within 2 – 3 weeks)

Supervision of students by university teacher; analysis of each visit

Advanced Training (3rd phase)

Scientific advanced training for physics teachers:
- Lectures on recent research results (e.g. discovery of Higgs-Particle / Noble prize)
- Lectures on specific topics (e.g. particle physics, cosmology) with links to school

Didactics advanced training for physics teachers:
- Presentation of teaching methods in new school-topics (e.g. Masterclass on particle physics)
- Presentation of possibilities in out-of-school location Physikwerkstatt Rheinland

Statement / Conclusion / Lessons learned / Take-Home Message

- „Simulating" teaching already early on in close connection with scientific education
- Out-of-school locations are excellent connecting points of university and school
- Close cooperation of university and school also beyond teacher education

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January 20th – 21st 2014, Essen

Federal Ministry of Education and Research

Against the transition shock — Physics teachers education at Bonn University

Teachers education in Germany is divided into two phases. The first phase takes place at Universities and focusses on the academic education in scientific subjects, their didacts as well as educational sciences, while the second phase takes place at schools and special seminars focussing on the practical training to qualify the academically trained students to give self-dependent lessons and to act sucessfully as teacher. Further, in a third phase teachers participate in a life-long-learning to improve their subject knowledge as well as their pedagogical and didactical skills.

At Bonn University the physics teachers education focusses on the combination of the academic education in physics with pratice-oriented courses to merge these main parts of teacher education most reasonable.

Our out-of-school location „Physikwerkstatt Rheinland" serves as most suitable link between the academic phase of teacher education and school.

It offers unique possiblities to students, pupils and teachers and opens the opportunity for life-long-learning for physics teachers.

Team

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European Doctorate in Teacher Education

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EDiTE
European Doctorate in Teacher Education

Lifelong Learning

This project has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Background Information

Innovative schools and excellence in education are key factors for the future of today's knowledge-based societies. Professionals in teaching and learning have to meet the challenges set by new scientific knowledge and changing environments.

These developments **require effective ways of education in teacher professionalism** which target the emerging challenges both theoretically and practically, embedded in a complex network of social developments, political interest, national cultures and traditions.

A transnational review by the European Network of Teacher Education Policies (ENTEP) revealed: (Iucu, 2010)

- **Disparity across EU teacher education lifelong curricula** due to a range of organizational, cultural and pedagogical issues;
- **Problems for mobility of teaching professionals**, due to discretion on the type of doctoral programmes offered by institutions between and within countries;
- **Obstacles** for teaching professionals **to enter education science PhD programmes**, due to specific entry criteria;
- Potential **negligence of knowledge from the field** in conventional PhD programmes.

The EDiTE project

A consortium of 5 universities from the European higher education area initiated the EDiTE project (October 2012 – September 2014). The project :

- Aims to develop an original, transnational and interdisciplinary **joint doctoral programme** in teacher education;
- Creates a **closer link between practice and theory** in teacher education;
- Moves **transnational research** in teacher education nearer to national educational institutions;
- Provides a forum for **sharing theoretical knowledge and good practice** from a European perspective;
- Promotes **standards, procedures and unifying principles** for the design, organization and development of doctoral study programmes in teacher education (generative model).

Consultation Process

The development of the curriculum is enriched by an ongoing consultation process with teacher education experts in Europe. By September 2013, **38 experts were interviewed** ad asked about their expectations and aspects such as quality criteria, target group, job profiles, competences of graduates, research fields.

PhD Curriculum

The curriculum (180 ECTS) is structured in two consecutive modules.

Advanced Studies Module: a comprehensive learning programme, constituted of three thematic sub-modules. 1) Advanced Pedagogical Studies, 2) Transversal Studies, 3) Research Methodology and Management.

Individual Research Module: an intensive research programme that creates a general framework for students to realise their individual research and makes their active involvement possible in relevant research on teacher education.

TITLE	ECTS	SUB MODULES
Module 1: Advanced Studies	30	Advanced Pedagogical Studies
	12	Transversal Studies
	18	Research Methodology and Management
Module 2: Individual Research	120	Research activities
		Residential Research Activities
		Defence of PhD

EDITE graduates become multipliers in their national, regional and local contexts shaping **new kinds of intersections** between academic and vocational knowledge and competence.

Results from Consultation

- **Target group**: (head) teachers, practitioners from non-formal education sector and education institutions
- **Main expectation and challenge**: Linking theory and practice, providing individual learning paths
- **Added value**: student and teacher mobility, intercultural perspective, European research network.

Consequences for EDiTE

A joint degree is a **win-win situation:** with attractiveness for students and lecturers; for innovative university programme design, and national education profiling (Knight, 2008). Its realisation requires continuous **cooperation with national and European stakeholders** in teacher education.

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European Doctorate in Teacher Education

Teaching professionals are increasingly confronted with complex global challenges. Effective ways of lifelong teacher education (TE) which target the challenges are required, embedded in a complex network of social developments, political interest, and national cultures and traditions. A transnational review by the European Network of Teacher Education Policies (ENTEP) revealed disparity across European curricula for lifelong TE. Conventional PhD programmes show potential negligence of knowledge from the field, but there is also a current focus in preparing teachers for European co-operation.

These developments were the starting point for the European Doctorate in Teacher Education (EDiTE) project. Five universities from the European higher education area have joined for a collaborative development that will add a European dimension to lifelong TE. It also allow for the development of joint systems and practices in TE which are equally relevant for local stakeholders.

The main objective of the two years project is the development of an original, transnational and inter-disciplinary joint doctoral programme in TE.

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Outcomes of Teacher Education (WiL)

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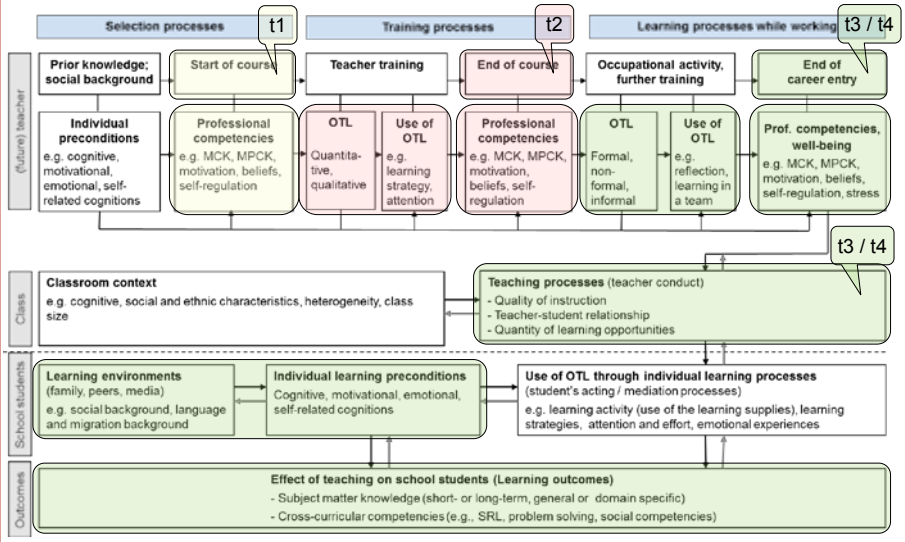
PH SG Pädagogische Hochschule St.Gallen

Background Information

In German-speaking Switzerland, kindergarten, primary and secondary school teachers are trained in a single phase. In total, teachers are trained at 17 universities of teacher education. Since the Bologna Process, the training for kindergarten and primary school teachers ends with a bachelors degree and the training for secondary school teachers with a Masters degree. At many universities of teacher education, generalists for all school subjects are trained at the primary level. At secondary level I, teachers become qualified to teach three to four subjects. The majority of the training at the universities focuses on the theoretical aspects. In addition, the practical training includes shorter or longer practicals at the primary schools. The universities of teacher education in German-speaking Switzerland are largely autonomous and have differing curricula. The Swiss Conference of Universities of Teacher Education (Schweizerische Konferenz der Pädagogischen Hochschulen, COHEP) merely provided recommendations for the implementation of the Bologna Process in the teacher training in Switzerland. For this reason, the theoretical and practical training differs significantly depending on the training institution.
In order to have some starting points for comparing and harmonizing the universities of teacher education in German-speaking Switzerland, the international comparative study on teacher education, Teacher Education Development Study in Mathematics (TEDS-M), in German-speaking Switzerland was expanded by an additional sample at the beginning of the course.
The analyses showed large differences in the curricula between the individual training institutions (Krattenmacher, Brühwiler, Oser & Biedermann, 2010) but also large differences in performance in mathematics content knowledge (MCK) and mathematics pedagogical content knowledge (MPCK) at the primary level. The study found large differences in performance between the institutions (MCK = 102, MPCK = 82 points on the TEDS-M scale) in MCK and MPCK amongst future primary school teachers in German-speaking Switzerland. Furthermore, significant results were found between the various training courses at the primary school level. Future teachers, who are trained for kindergarten to the 3rd grade performed significantly lower in MCK and MPCK at the end of the course than students who were trained for grades 1- 6. However, it could not be explained what was responsible for these differences. Likewise, it is not known whether this difference in knowledge leads to unequal educational opportunities of the school students taught. The performances in MCK and MPCK are relatively homogenous in the training at secondary level I (Brühwiler, Affolter & Kopp, in press). In order to structure the harmonization of teacher training aimed for as effectively as possible, more information regarding the effectiveness of teacher training should be obtained through Project „Outcomes of Teacher Education“ (Wirkungen der Lehrerbildung, WiL) presented here.

Description

Project WiL is an extension of the international project, TEDS-M, and will review the threefold effectiveness expected of the teacher training: (1) Inception of the professional competencies of future teachers in teacher training and their further development in the first years in their profession. (2) The effect of the professional competencies on the (mathematics) teaching as well as (3) on the learning benefits for the school students.



(modified according to Kunter, Kleickmann, Klusmann & Richter, 2011; Fend, 1998; Helmke, 2012)

This study is based on a theoretical framework model which represents an extension of the supply-use model. The survey dates (t1 to t4) for the study are included in this framework model.
The sample comprises students at the primary and secondary level I of the Universitiy of Teacher Education St.Gallen. The teachers are trained as generalists for the primary level and receive training in four teaching subjects at secondary level I.
The students were surveyed at the beginning of the course as well as at the end. Additional surveys on the aspects mentioned in the framework model are expected to be done after two years of teaching. In addition, the teachers' classes at school will be surveyed on t3 and t4 in order to be able to report the increase in performance amongst the school students.

Conclusion

For effective harmonizations, analyses are required in the Swiss-German teacher education system to find out more about what students are learning during teacher training and what the impact is of the professional competencies acquired. The first longitudinal analyses show no changes during the course of study for the primary level (N= 102) in MCK. The future primary school teachers have the same amount of mathematical knowledge at the end of the training as they had at the beginning of the teacher training. This result is not surprising taking into account that primary school teachers do not have much academic training in mathematics. In MPCK, the future teachers showed a significant increase in knowledge by the end of the course. This increase is greater the higher the subject matter-related career motivation, i.e. a teacher's interest in mathematics. The results raise questions such as: What is the impact of generalist training on the quality of the training and thereby the professional competencies of teachers? How much time should be made available for subject-matter content in teacher training?

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January 20th – 21st 2014, Essen

HRK German Rectors' Conference
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Federal Ministry of Education and Research

Outcomes of Teacher Education

For effective harmonizations in the Swiss-German teacher education system, analyses are required to find out more about what students are learning during teacher training and what the impact is of the professional competencies acquired.

The Project WiL is an extension of the international project, TEDS-M, and will review the threefold effectiveness expected of the teacher training:

(1) Inception of the professional competencies of future teachers in teacher training and their further development in the first years in their profession.

(2) The effect of professional competencies on the (mathematics) teaching as well as

(3) on the learning benefits for the school students. The first results show no changes during the course of study for the primary level (N=102) in mathematics content knowledge (MCK). The future primary school teachers have the same amount of MCK at the end of the teacher training as they had at the beginning.

In mathematics pedagogical content knowledge (MPCK), the future teachers showed a significant increase in knowledge by the end of the course. This increase is larger the higher the subject matter-related career motivation.

Team

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Selecting prospective teachers: New approaches to identifying non-cognitive attributes

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Background Information

In the UK, there is no standardised selection process for the 70,000 applicants (~30,000 places) for teacher training (Hutchings, 2010). Selection typically involves an initial screening of background (academic qualifications, personal statements and references), after which candidates are invited for face-to-face interviews consisting of a range of individual and group activities.

The goal of the selection process is to select prospective teachers based on **cognitive skills** (i.e., subject knowledge, literacy and numeracy skill, intelligence) **and non-cognitive attributes** (i.e., interpersonal skills, self-regulation, emotional resilience, commitment to the profession). Non-cognitive attributes are currently assessed non-systematically (i.e., subjectively) through evaluation of personal statements and observation of behaviour during the interview process.

Non-cognitive attributes have been highlighted as a key area of importance in the selection of teacher candidates in the UK (Donaldson Report, 2010; House of Commons Education Committee, 2012). Non-cognitive assessment instruments (i.e., personality tests) currently available are based on conventional personality measures largely used for personnel selection in business settings.

Grounded in motivation theories (e.g., self-efficacy, self-determination) and *implicit trait policy* (Motowidlo, Hooper, & Jackson, 2006), the goal of this project is to improve the assessment of non-cognitive attributes in the selection of teacher training candidates in the UK and new teachers in Canada.

Description

Specific projects, measures and approaches to harmonising theory and practice in teacher education & training

The goal of our project is to validate a context-specific **situational judgment test (SJT)** to assess prospective teachers' non-cognitive attributes (e.g. personality, psychological, interpersonal skills). SJTs have been shown to be valid for use in selection in a range of professions (e.g., medicine and dentistry, Patterson et al., 2012).

Initial **job analysis** involving individual and focus group interviews with experienced teachers and training providers produced **three competency domains.**

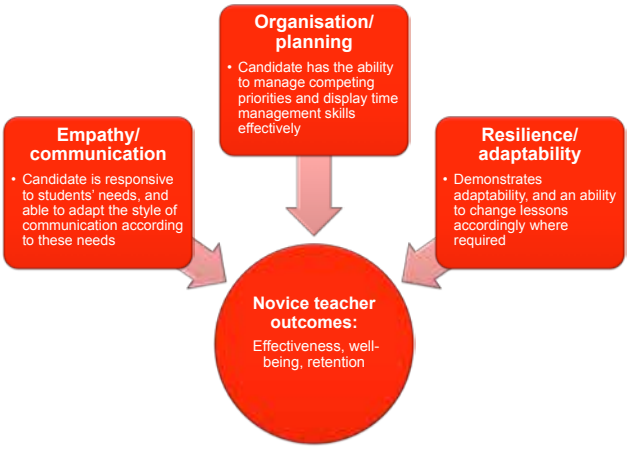

Figure 1. Three competency domains identified through job analysis.

Statement / Conclusion / Lessons learned / Take-Home Message

We are piloting an innovative approach—SJTs—to evaluate key non-cognitive attributes of novice teachers. Further development is targeting:

- **Testing the SJTs in multiple contexts (cultures, school levels, academic disciplines)**
- **Extending the range of non-cognitive competency domains**
- **Building evidence for prediction of a range of outcomes: teaching effectiveness, retention, well-being**

References and further information available on request from robert.klassen@york.ac.uk

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HRK German Rectors' Conference
Project nexus
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Federal Ministry of Education and Research

Selecting prospective teachers: New approaches to identifying non-cognitive attributes

Prospective teachers need adequate cognitive abilities as well as well-developed non-cognitive (psychological; interpersonal) attributes.
We present an international project aimed at designing and validating a context-specific tool for identifying key non-cognitive attributes for teacher selection. Following a comprehensive job analysis, we are pilot-testing a situational judgment test (SJT) built on three competency domains: empathy/communication, organization/planning, and resilience/adaptability.

The pilot version of the SJT is being tested in the UK to select candidates for teacher training and in Canada to select teachers for teaching positions.

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St Mary's University College Belfast

It's Teacher Education...NOT Training! Mediating Competences and Values for Authentic Learning in Initial Teacher Preparation

St Mary's University College Belfast
A College of Queen's University

Teacher Education in Northern Ireland – A Competence and Values Framework (GTCNI, 2007)

The GTCNI core values

- Service
- Trust
- Respect
- Commitment
- Honesty
- Integrity
- Tolerance
- Fairness
- Equality

The GTCNI model for teacher development

- Values and attributes
- Mission and purpose
- The Reflective and Activist Teacher
- Sense of professional autonomy
- Knowledge and competence

The GTCNI Competence Framework

27 Competence Statements for the professional development of teachers under three broad headings

- Professional values and practice
- Professional knowledge and understanding
- Professional skills and application
  - Planning and leading
  - Teaching and learning
  - Assessment

Teacher Education in Northern Ireland – The St Mary's University College Model

Framework

The BEd (Hons) Primary Degree Programme at St Mary's University College

Vision

Through a concurrent, research-based and values-oriented approach, the programme develops and inspires competent, reflective teaching professionals, infusing their education with a sense of moral purpose and a desire to contribute to the betterment of society. In partnership with schools, this manifests itself above all in a vocational commitment to the holistic development of each pupil.

	Education Studies	Key Skills	PDSE	Curriculum Studies	Capstone	Cross-Programme themes – Literacy, Numeracy, Special Educational Needs, ICT
Year 4 Leadership	The disciplines of Education - philosophy psychology Sociology providing 'A practical and Critical' Programme (Pring 1999; 2003;2012)	Literacy Numeracy Using ICT	Critical reflection	The Northern Ireland Curriculum (CCEA, 2007)	Reflexive Integrative (Healy and Jenkins, 2006; Jenkins and Healy, 2007b; 2009)	
Year 3 Specialism	The Community of Practice (Wenger 1998)	The importance of high levels of literacy and numeracy to the 'knowledge economy' (DENI, 2009)	Reflective action (Dewey 1933)		Subject Studies And Subject Application	
Year 2 Foundations 2	Leadership of self of others of learning		Mediation, History, Consciousness (Vygotsky 1962; 1978)		Pedagogical Content Knowledge (Schulman 1986; 1987)	
Year 1 Foundations 1	(Densten and Gray 2001; Frost and Harris 2003; Fullan, 1993; Muls and Harris 2003)		Reflection 'in', 'on' and 'for' action (Schon 1987)		Subject specialism in Primary Education (Alexander et al. 2010)	
			Guided Reflection (Welch and James 2007)			
			Competence (GTCNI, 2007)			
			Partnerships (Edwards 1997; Edwards and Collison 1996)			
Ethos Values Dispositions	Faith-Based Education		Pluralism	The international Dimension		

Orientations

Curriculum

- *Education studies*
- *Curriculum studies*
- *Key skills*
- *Subject studies*

Reflexive in nature
Built on theory-practice relationships
Concerned with knowledge creation

Values and Vision

- Holistic orientation to personal and professional fulfilment
- Teacher as a moral agent working for the betterment of society

Professional Development and School Experience

- Developmental with increasing expertise, mastery and autonomy
- Competence-Based
- Professional partnerships
- Problematized inquiry into practice
- Reflective practice based on guided and personal reflection
- Service and Leadership orientation

Pedagogical

- Observation
- Collaboration
- Group orientation
- Integrative (Capstone)
- Reflective
- Research-Based

Learning and Professional Development Milieu

- Aspiring
- Specialist
- Distinctive
- High-performing
- Local, national and international partnerships
- Faith-based context
- Social context
- Historical context
- Geographical context

Key Messages

1. *Effective teacher education is based on a clear foundation of values and vision.*
2. *Teacher education should be underpinned by the process of critical reflection.*
3. *Competent teachers are best developed in aspiring, specialist and distinctive professional learning communities working in a spirit of partnership, support and collaboration.*

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It's Teacher Education - not Training! Mediating competences and values for authentic learning in initial teacher preparation

The General Teaching Council for Northern Ireland [GTCNI] (2007) competence framework is based on the concept of the Reflective and Activist Teacher.
It is centred on the development of core values which form the basis for practice-based competence related to knowledge and understanding and skills and application in planning and leading, teaching and learning and assessment.
The Primary Education Programme at St. Mary's University College utilises the GTCNI framework to create an approach to teacher development which regards teaching competence holistically and within the context of a broader framework of values coupled with a sense of professional vocation and mission.
Five strands have been developed with each converging on the central pillar of professional development through reflection and mediation of experience in, on and for practice (Schon, 1987).

To support this central core, the curriculum, pedagogical, milieu and values orientations determine how the processes of learning and development are facilitated.

The key messages outlined on the poster indicate a process of 'education' rather than 'training'. They are relevant given the success of the programme as measured by a range of independent output measures (ETI, 2009; Marszal, 2012; The Guardian, 2013).

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Poster and abstract references available at
www.hrk-nexus.de/education-and-training-for-european-teachers/poster

The Developement of Social Competence in Primary School: An Intervention Study with the Educational Set 'EMOscope'

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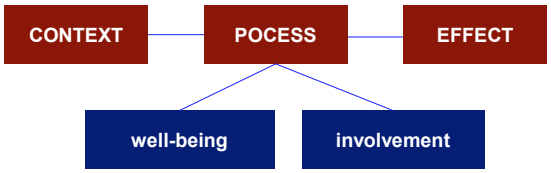
KU LEUVEN

Background Information

The research project is embedded in the work of the Research Centre for Experiential Education. The study is experiential in its approach. This means that the researcher makes a constant effort to understand the process of experiencing in children and teachers participating in the research, in other words to reconstruct their experience.

The study addresses three categories of variables that cover the quality of education: the context, the process and the effect.



At the level of context, the attention is paid to establishing an environment that fosters the development of social competence. The main focus is here on the pattern of teacher intervention called teacher style. At the level of process, two indicators that are crucial in the search for quality is taken into account: emotional well-being and involvement of the child. Children social competence is considered as a desired effect.

Description

The aim of the research is to identify the active ingredients of learning environments in order to develop social competence in children.
The study will be conducted as an intervention research with the pre-test and post-test experimental design with the use of the educational set "EMOscope".

The research will bring answer to the following overall research question:

- What are active ingredients of learning environment that contribute to the development of social competence?

This question leads to formulate specific research questions:

- What is the impact of the implementation of the set of materials the 'EMOscope' on the development of social competence in primary school aged children?
- What is the relation between gender and age and the level of social competence?
- What is the relation between a way the intervention is implemented by teachers and its impact on the development of social competence?
- What is the relation between a way the intervention is implemented and children's involvement?
- Is there a relation between child's involvement during the implementation of the 'EMOscope' and the level of social competence?
- Does the implementation of the 'EMOscope' has an impact on the classroom climate?

Expected outcome

The research will produce new knowledge on the development of social competence. It has a particular importance since it will provide an opportunity to develop social competence with a tool in which a holistic approach of competence is applied. By investigating the impact of the implementation of the innovative educational set 'EMOscope', the study will produce an evidence base for practice. It will investigate the role of involvement and group climate as a condition for deep-level-learning. Moreover, the research will record, analyse and document the role of the teacher during the implementation of the set 'EMOscope'. The research will also develop an instrument that measures the level of social competence.

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The Development of Social Competence in Primary School: An Intervention Study with the Educational Set 'EMOscope'

The research aims at understanding how to effectively develop social competence in primary school children. The study is designed as an intervention research that is as a purposive action intended to increase the level of knowledge on how to create a powerful learning environment for the development of social competence. The intervention is built around the existing set of educational materials "EMOscope" designed by the Research Centre for Experiential Education. A series of sessions in primary education with the use of the "EMOscope" will be conducted in order to develop social competence in children.

The data will be collected from observations, the pre-test, the post-test, questionnaires and interviews with teachers and from children's self-evaluations.
The study will provide an answer on several questions such as: what are the conditions that support an effective implementation of the 'EMOscope'; what role is played by the background variables in a child (gender, age) and by the process of implementation.

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ITE reform implementation in Italy, year 1: food for thought

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Background Info

Structure and distinctive features of national teacher education system (reform in progress)

- **2010 ITE reform law followed up 2009 PISA results/need for improvements. MA level qualifications now required for teaching all school levels. Reform law mentions expected outcomes ITE: subject-specific, pedagogical, methodological, organizational, digital, foreign language and interpersonal competences.**
- **Pre-primary/primary school teachers: 5-year university programmes with 600 hours of practice starting in year 2; entry selection test, number of places linked to teacher demand forecasts.**
- **Secondary school teachers (lower secondary): BA subject studies + specific MA course (entry selection test, teacher demand forecasts). Upper-secondary school teachers' university pathways: reform in progress (only general MA subject studies now available).**
- **Teaching qualification (after MA studies): one-year ITE programme, with different curricula according to school levels/subject specializations (called *TFA-Tirocinio Formativo Attivo*).**
- **Common features post-MA ITE one-year programmes(TFA): four curriculum areas (teaching practice/reflection in school/university settings; education sciences; subject didactics; subject didactics workshops).**
- **ITE providers: university subject departments (after closure of inter-university ITE institutions/*Scuole di specializzazione per l'insegnamento,* akin to French *IUFMs)*.**
- **ITE(TFA) programmes first implemented a.y. 2012/13; additional, transitory fast-track ITE programmes for temporary unqualified teachers activated in a.y. 2013/14. ITE reform evaluation will be possible only after implementing whole cycle university studies (not in place yet) for different school levels.**

Description

Specific projects, measures and approaches to harmonising theory and practice in teacher education & training

Recent ITE reform (2010 law):

- **shorter post-MA ITE (60 ECTS, one year instead of two), shifting focus from theoretical preparation (educational sciences, subject studies) to teaching practice and subject didactics.**
- **Aim: strengthening theory-practice links and workplace learning; aligning ITE to European recommendations/ Bologna requirements.**
- **Key role teaching practice and related activities (19 ECTS, 1/3 of whole programme). Mandatory courses/ assignments/ practice on special needs and diversity issues.**
- **Pivotal function of teacher educators, helping student teachers integrate input from school teaching practice, reflective activities, didactics workshops and theoretical courses at university.**
- **Teacher educators: required to work in both university and school, for updated knowledge school realities; selected for previous ITE experience, PhD, relevant research activity/publications.**

Lessons learned

Reflections after first year implementation reform of post-MA ITE (TFA):

- **Entry selection (written/oral tests): effective in screening subject knowledge basic requirements.**
- **Key importance of careful timing/planning in reform policy implementation: delayed start of one-year ITE programme can affect joint planning, schedule, integration ITE activities, with impact on effective school practice, reflective practice, and liaising/ dialogue between teacher educators in charge of different curriculum areas (key for programme consistency and relevance).**

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ITE reform implementation in Italy, year 1: food for thought

An overview of ITE reform features in Italy according to the 2010 law (DM 249/210) draws key aspects of change, linked with policy priorities and concerns – which reflect increasing alignment with European/international recommendations and debate about education improvement.

Major ITE changes involving institutions, governance and curriculum are outlined, together with underlying issues and improvement aspects (with a focus on post-MA professional ITE as common for teaching all school levels).

A few reflections on lessons learnt after the first year of reform application provide food for thought about the crucial importance of coordination and timing in policy reform implementation, for its impact on ITE quality and consistency – on the key area of school practice in particular.

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Teacher training in Poland- pedagogical practice

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Structure and distinctive features of Polish teacher education system
Teacher education standards are formulated in the new Regulation by the Minister of Science and Higher Education of the 17 January 2012 on training standards for the teaching profession.

*** Teacher training in Poland is held at universities and higher schools. It is provided within two sectors of the education system:**
-Higher education sector (degree programmes, including first, second and long cycle programmes)
-School education sector: college programmes including teacher training colleges and foreign language teacher training colleges
*** To become teacher in primary and secondary school, have to participate in regulars studies in specific field – mathematics, physcis, biology, history, languages, and choose specialization in teacher training. There are additional subjects in curriculum during specialization: psychology, didactics, pedagogy etc.**
*** Students also have to do their methodical and pedagogical practice in school.**
*** To teach in pre-primary school students have to finish pedagogical studies.**
*** Teachers employed in pre-primary and primary schools ought to have, at minimum, qualifications of a Bachelor's degree.**
*** Teachers employed in lower secondary and upper secondary schools as well as basic vocational school ought to hold a Master's degree.**
*** The specialization has usually two phases: during their bachelor degree students get their certificate to teach in elementary schools, during the master's degree students get a certificate to teach in gymnasium (lower secondary school) and higher secondary school. (there is of course some exeptions but this is the standard).**

Description

Specific projects, measures and approaches to harmonising theory and practice in teacher education & training

Pedagogical practice in teacher training in Poland
*** Teacher training students in Poland used to do only practice in the subject they will teach (math, biology etc.).**
***Since 2012, additional pedagogical practice has been introduced to teacher training programmes across Poland. It provides better preparation of students to deal with the behavioral and pedagogical issues they will face as fully qualified teachers.**
*** Teacher training in Poland now provides good preparation not only in methods for teaching specific subjects but also in good instructional technique issues. This new process harmonises the whole teacher training programe across Poland.**
*** The programme comprises 45 hours of teaching practice; 30 hours during the students Bachelor degree, and 15 hours during the Masters degree.**
*** This practice is concentrated on psychological and pedagogical aspects of being a teacher. Students participating in the practice are required to make observations in the classroom on how teachers deals with everyday issues: identifying changes in pupil behaviours, dealing with disruptive pupils, supporting pupils with learning difficulties, and insuring class inclusiveness.**
*** Students also have to prepare and deliver lessons on their own. The theme of the lessons have to be an important pedagogical subject (drugs, alcoholism, bullying, assertive behaviour, communication skills ect). The practice has to be made during the semester the student has pedagogical lectures at university. In this way the student can discuss any issues or problems with university teachers or their peers in a timely manner.**
*** During the practice, student have the opportunity to talk to school psychologists, pedagogists, and special need teachers and gain knowledge about what kind of problems these specialists deal with in the school.**

Statement / Conclusion / Lessons learned / Take-Home Message

It is important to provide harmony between theory and practice and to remember that teachers not only transmit knowledge but also have the responsibility to develop children as individuals. He/she has to deal with various difficult situations in the classroom and needs good prior preparation. That is why the additional pedagogical practice is great progress in enhancing teacher education in Poland.

Teacher training in Poland- pedagogical practice

The paper present shortly structure of teacher training in Poland and concentraces on new pedagogical practice in teacher training. Since 2012, additional pedagogical practice has been introduced to teacher training programmes across Poland.
It provides better preparation of students to deal with the behavioral and pedagogical issues they will face as fully qualified teachers. Teacher training in Poland now provides good preparation not only in methods for teaching specific subjects but also in good instructional technique issues. This new process harmonises the whole teacher training programe across Poland.

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5 Crucial Key Competencies for Education- Competency-based Approach to Assessment of Employees

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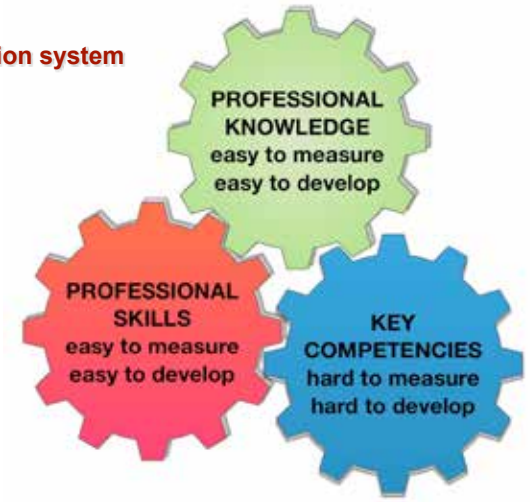
Rektor of Karel Englis College Inc.

Background Information

Structure and distinctive features of national teacher education system

We are using competency model by the definition of National System of Occupations created by the Ministry of Labor and Social Affairs of the Czech Republic and based on the OECD surveys, which is applicable of course on the positions of college/academic teacher. It is clear that the development of key competencies can be difficult.



Description

Specific projects, measures and approaches to harmonising theory and practice in teacher education & training

Our project was developed by focusing on the personnel policy of Karel Englis College Inc., respectively was inspired by following goal - to increase its competitiveness, which is to provide a quality education. This hinges on the academic staff of our institution, their teaching activities based not only on their professional knowledge and skills, but also their soft or key competencies. We identified following core competencies for teachers as most important:

- **effective communication skills,**
- **lifelong learning,**
- **an active approach,**
- **coping,**
- **exploring and orientation in information.**

Light motive of our research is the evaluation of academic staff respectively their teaching activities just with the emphasis on the above competencies. Where are allocated failures, it is necessary to focus on the development level of key competencies. The evaluation process is based on so-called 360° assessment.

Statement / Conclusion / Lessons learned / Take-Home Message

The core of our survey could be called as competency-based approach to assessment of employees. The assessment process, seen as a very important part of employee performance, is normal for business world. But in relation to the competency model of an academic teacher is the evaluation of those five key competencies (by supervisor assessment, self-evaluation and evaluation of students) crucial, because it presents a tool for increasing of the education level.

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5 Crucial Key Competencies for Education-Competency-based Approach to Assessment of Employees

This poster summarizes the findings of a research project focused on the personnel policy of Karel Englis College Inc., and respectively, to increase its competitiveness, which is to provide a quality education. This hinges on the academic staff of the College, their teaching activities based not only on their professional knowledge and skills, but also their soft skills or key competencies. We are inspired by the definitions of the National System of Occupations (created by the Ministry of Labour and Social Affairs of the Czech Republic) , which is based on the OECD survey (outputs of the DeSeCo Project, the Concept of 21st century skills , etc.).

We believe that the core competencies for teachers are mainly effective communication skills, lifelong learning, an active approach, coping, and exploring and orientation in information. These should be aimed not only on the training of teachers, but also in their assessment process.

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IMPLEMENTATION OF PROFESSIONAL DEVELOPMENT
- EMPIRICAL RESULTS FROM A CASCADE TRAINING IN CAMEROON

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Background Information: Educational Quality in sub-Saharan Africa/Cameroon

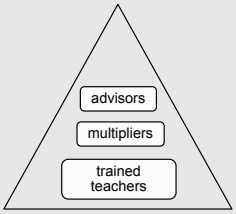
- quality of education strongly depends on quality of teacher education
- in many sub-Saharan countries: teachers employed with no or insufficient qualification (Davies et al. 2005; Lewin & Stuart 2003)
- high demand of new teachers leads to further employment of insufficiently trained teachers
- need for ongoing on-the-job professional development (Villegas-Reimers 2003)
- Cameroonian context: two education system (Anglophone & Francophone regions) & language issues
- SSA countries: far from reaching Education For All-goals (e.g. EFA-Goal 6: improvement of educational quality) (cf. UNESCO 2012)

➢ **Professional development as means to foster teacher professionalism in development cooperation countries**

Description: Intervention, Methods, Results

INTERVENTION:

➢ **Structure:**
- *training of trainers:* twelve-month training of multipliers, yearly rotation
- *school-based training:* regular school-based workshops by the multiplier(s)
- *central trainings:* yearly basis by the coordinator team



➢ **Goals:**
- change in teaching and learning culture
- increase of the quality of teaching by professionalizing teachers
- focus: methodological repertoire of teachers (cross-domain & domain-specific)
- training in activity-learning methods

RESEARCH QUESTIONS:

➢ Did the implementation of learner orientation in the classroom practice of teachers by means of professional development work?
➢ Did the implementation work according to the cascade model?

METHOD: Questionnaire Survey

- three questionnaires: *N*=292 teachers, *N*=1.095 students; *N*=13 principals
- tested scales form large-scale assessments (PISA & TIMSS)
- mixed-method, cross-sectional design: questionnaire and videotape survey
- data collection in 2010 in 13 schools in Anglophone Cameroon

RESULTS:

Self-reported teaching practice:

Significant differences between the four teachers groups in behalf of teachers in programme schools:
- multipliers in programme schools (*n*=24)
- trained teachers in programme schools (*n*=176)
- trained teachers in control schools (*n*=13)
- untrained teachers in control schools (*n*=67)

Self-reported data on:
➢ *use of student-activity methods,*
➢ *learner-oriented goal-setting,*
➢ *teacher-student relationship,*
➢ *school climate,*
➢ *limiting school conditions.*

Summary of the results:

- Trained teachers show higher use of active methods in their classroom practice & higher degree of learner-oriented goal setting **(for details see: Lange 2013)**
- The results from the non-parametric analysis of the video ratings validate the self-reported data from the questionnaire survey and confirm the cascade model training of the professional development porgramme.

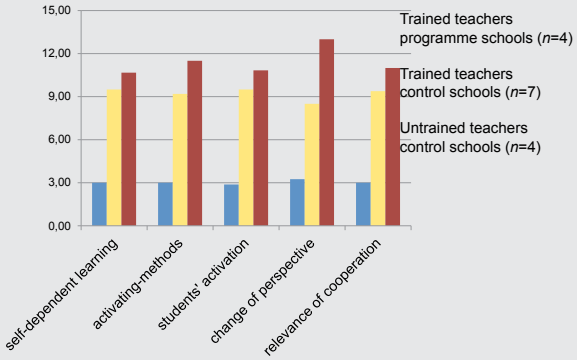
METHOD: Video Survey

- video analysis (*N*=15) with high-inferent coding system
- category system adapted from Krogull & Scheunpflug (2011)
- categories refer to the theoretical model of Helmke (2010)
- high interrater reliability: (*N*=270 ratings per person: ICCunjust=.82) (Wirth & Caspar 2002)

RESULTS:

Actual teaching practice:

Non-parametric Kruskal-Wallis H-test used for comparison:



	Self-dependent learning	Activating-methods	Students' activation	Change of perspective	Relevance of cooperation
Chi-Chadrat	7.43	8.74	7.67	8.61	8.24
df	2	2	2	2	2
p	.024	.013	.022	.014	.016

Lessons learned: for successful implementation of professional development

(1) Ongoing **follow-up** supervision; (2) **Combination** of cascade model and school-based trainings; (3) Regular **exchange** forums for persons on all cascade levels => concentration of expertise at top level of cascade is avoided (Hayes 2000); (4) **Entire school** participates in development process: support from school principal assists the professional enhancement; (5) Counteracting teacher mobility by e.g. teacher incentives; (6) Effectiveness depends more on **didactical modules** than on length of multiplier training **=> specific conditions necessary for effective implementation of cascade models in professional development.**

Literature: **Davies, L., Harber, C. & Schweisfurth, M. (2005):** Democratic Professional Development. **Helmke, A. (2010):** Unterrichtsqualität und Lehrerprofessionalität. Diagnose, Evaluation und Verbesserung des Unterrichts. **Krogull, S. & Scheunpflug, A. (2011):** Evaluation of the "Participatory and Active Pedagogy" (PAP) run by the National Bureau of Protestant Teaching of the Protestant Council of Rwanda. **Lange, S. (2013):** Learner orientation through professional development of teachers? Empirical results from cascade training in Anglophone Cameroon. In: Compare: A Journal of Comparative and International Education. **Lewin, K. M. & Stuart, J. S. (2003):** Researching Teacher Education: new perspectives on practice, performances and policy. DfID Educational Paper No. 49a. **UNESCO (2012):** EFA Monitoring Report 2012: Youth and Skills. UNESCO. **Villegas-Reimers, E. (2003):** Teacher professional development: an international review of the literature; Quality education for all. **Wirtz, M. & Caspar, F. (2002):** Beurteilerübereinstimmung und Beurteilerreliabilität.

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Implementation of Professional Development - Empirical Results from Cascade Training in Anglophone Cameroon

In the discussion on quality of schooling in development co-operation countries, the qualification of teachers is of central importance. In view of the limited financial and personal resources, the question is how this can be achieved efficiently. There is little research on the implementation of cost-economic cascade trainings.

This study presents empirical findings on the effects of a cascade training in professional development on the implementation of learner orientation into classroom practice of teachers in Anglophone Cameroon.

The methodological approach is a quasi-experimental control group design.
Data was collected from 292 teachers, 1.095 students, 13 principals and 15 lessons were videotaped.
The results indicate the effectiveness of the cascade training and may contribute to the post-2015 discussion on the improvement of professional development.

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Initial Education for teachers in Belgium-French-Community

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UMONS
Université de Mons

Background Information

Belgium

3 education systems → case of Belgium-French-Community

Decree (2000;2001) → 13 competencies to be developed as part of initial training (compulsory education)

- *Socio cultural studies*
- *Educational studies, including the development of a scientific approach and research attitude*
- *Socio-affective and relational studies*
- *Know-how*

Foster professional skills and reflective knowledge about those skills + developing teacher identity

Simultaneous training model	*Consecutive training model*
*bachelor's degrees (3*60 ECTS)*	*University degree (at least 5*60 ECTS)*
pre-primary, primary and lower secondary teachers (grade -3 → 9)	*upper secondary teaching (grade 10 → 12)*
3 years	*300 h after a master or during a teaching master degree*
Disciplinary and pedagogical contents	*Training courses oriented to professionnel dimension*
Internship (540h)	*60 h of Internship*

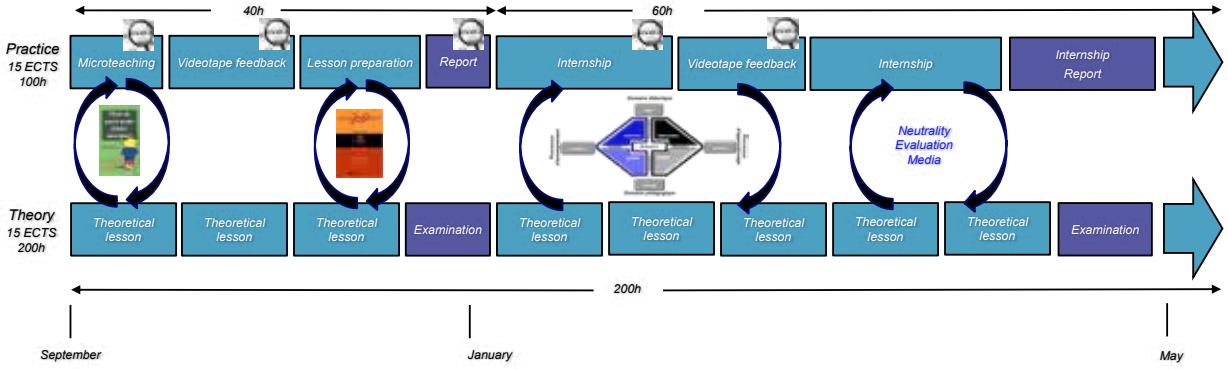
→ Educational level ↑ duration of teacher training ↓
(even more true if considering Higher Education)

Description

University of Mons

Teacher Training (upper secondary education)

Faculty of Psychology and Education & Warocqué Shool of Business and Economics



Research on reflexive practioner
Research on classroom observation

Conclusion

Crucial need : Internship supervisors trainining

Skills in practical analysis is required to reflectivity development

Teacher Educators training : how develop the supervision skills?

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Initial Education for teachers in Belgium-French-Community

Belgium is divided into 3 education systems. This communication is focused on the case of French Community of Belgium The current teacher-training course is founded on a 2001 decree outlining thirteen skills to be developed in the initial training program. One of these competencies, which is, in our view, especially crucial, is training young teachers to have a critical look at their own practices.

The core activities are organised around four themes
> Socio-cultural studies
> Educational studies, including the development of a scientific approach and research attitude
> Socio-affective and relational studies
> Know-how (linking between theory and practice, during teaching practice in real-life situations and practical analysis seminars)

In the French Community of Belgium, teacher training is not offered as a single, universal program, but is divided into several separate programs. Which teacher-training course a potential teacher takes depends on what degrees that candidate holds.

Teachers of pre-primary, primary and lower secondary school (grades -3 - 9) have to complete a bachelor's degree based on a simultaneous training model of 3 years. During the training, disciplinary and pedagogical contents are studied. The time allowed for the internship is very consequent: 540h

The training of the upper secondary teacher (grade 10 - 12) is a consecutive training model organised at the University. This training of 300 hours happens after a master or during a teaching master degree. There are only 60 hours of Internship.

The University of Mons (UMONS) offers a teaching qualification in those disciplines in which it offers degrees (Business, Economics, Education, Engineering, Psychology, Foreign Languages, among others). The fourth part of the aforementioned decree, concerning know-how, falls entirely under the supervision of the Department of Methodology and Training of the School of Psychology and Education (FPSE) supervised by Professor Marc Demeuse.

This program consists of four separate elements: (1) micro teaching and subsequent analysis of pedagogical practices, (2) a practicum in preparation for teaching, (3) a practicum in preparation for working in the school environment, and (4) a teaching practicum or student teaching experience. Scientific research related to this teacher training focuses more specifically on the first and second of these four learning activities, which require a time investment of 50 hours on the part of the student-teacher.

During those fifty hours of training, two skill sets in particular are targeted: (1) planning, managing and evaluating teaching/learning situations; (2) learning to have a critical look at one's own performance and practices. In order to reach these goals, the training activities that have been put in place adhere to certain basic criteria: first, they must place the future teachers in situations where they must interact with learners, secondly those interactive situations must have been planned in advance, and finally, those various requirements must lend themselves to allowing the future teacher to have a critical look at his/her own performance.

Initial Education for teachers in Belgium-French-Community

The central pedagogical activities used to achieve this goal are a micro-teaching session where the student-teacher is filmed, and a follow-up session during which the film is viewed by the student and a supervisor and discussed. In addition to the obvious pedagogical potential of this practice, it also generates material that can be used for analytical research.
In the same time, pedagogical activities related to the first, the second and the third part of the aforementioned decree are organised from September to December.

The link between theory and practice during the training on the one hand and teacher training and research on the other is permit by the use of same theoretical models.

In our lab, researches are related to classroom observation and reflexive practitioner. Based on our knowledge of initial teachers training, as least three points must be underlined:
There is a crucial need for an internship supervisors training. Indeed, in our system any teacher becomes internship supervisor on decision of his or her head teacher.
Other actors of the Initial Education for teachers must be more prepared ; those are the Teacher Educators in higher education.

In a Haute Ecole, teachers must acquire the CAPAES during the initial years of their career in order to meet the requirements for being formally appointed or hired… but the CAPAES is not especially designed to train teacher trainers. This programme is the same for all teachers from all Higher Education. Questions like how to develop the supervision skills, and the disciplines' didactics should be treated.

Last but not least, among all the result generated by our research, one seems to be very important and concerns the fact that skills in practical analysis are required for reflectivity development

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