



EdUSchool IO3

Educational module

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Educational module for teachers and leaders in University Schools

Intellectual Output 3 in the EdUSchool Project

1 The educational module in The EdUSchool project

Partnerships has become an important strategy to increase quality in both teacher education and schools, aiming to bring theory and practice together by help of University Schools. Partnership models are often highly context specific resulting in different implementations (Gerholz et al., 2020). Common to all is that they are oriented towards professionalization of teacher education.

The Erasmus+ project EdUSchool seeks to establish a common European understanding of University Schools, aiming to make significant contributions to further work in the field. The EdUSchool project has several objectives (Gerholz et al., 2020):

- Establishing European understanding of University Schools as an important stimulus for the future of teacher education in Europe
- Identifying success factors for implementing the concept of University School in all affected parties (i.e. non-governmental institutions)
- Identifying good practice activities of University Schools in Europe to generate orientation knowledge for teacher educators and teachers at University Schools
- Developing an educational module for teachers at University Schools
- Enhancing exchange processes for people working within the University School framework.

To achieve these goals the project has four intellectual outputs (Gerholz et al., 2020); (1) an institutional description of University School concepts in Europe, (2) a good practice collection by comparing the theoretical concepts with practical implementation, (3) an educational module for teachers acting within a University School concept, (4) a digital handbook with different possibilities to implement the idea of University Schools. This paper responds to intellectual output 3, which is a description of an educational module for school-based teachers and school leaders of University Schools.

University Schools are specialized organizations where various forms of collaboration activities between actors from school and university are formalized and take place. They are comparable to university-hospitals where teaching, research and medical treatment are seamlessly integrated. University Schools are thus specialized schools designed for a particularly close collaboration with the university where practical and theoretical knowledge are combined and integrated through coordinated activities related to research and development (R&D), education and mentoring. Specialization in this context implies that the University Schools with their teachers and leaders hold both collective and individual knowledge that enable them to carry out the task as University Schools. The aim of this module is to develop an educational module designed to meet this need for specialized knowledge in University Schools.

In the first part of the IO3 document we establish a knowledge base for the development of an educational module (the EdUSchool Study-Program), for teachers and leaders in University Schools, followed by a presentation of a framework for such a program. The knowledge approach is threefold; firstly, we present a general theoretical backdrop, secondly knowledge implications generated through IO1 (Gerholz et al., 2020) and IO2 (Bader et al., 2020) are used in the proposal of, thirdly, a framework for an educational module for school-based teacher educators. Finally, an already

implemented program in the University Schools in Trondheim, Norway (hereafter USSiT) is presented and lessons learned are discussed.

IO1 (Gerholz et al., 2020) and IO2 (Bader et al., 2020) found only a few activities directly related to University School teacher's professionalization and only one example of good practice of an implemented formal educational module in the partnerships mapped in these outputs. The latter is the USSiT-case, which has both been evaluated (Engvik & Östern, 2017) and researched (Emstad & Sandvik, 2020).

IO1 showed that the University School concepts were characterized by common overall goals, but differed in organizational implementations, which indicate that the proposed educational module must be flexible in order to adapt to different contexts. This is therefore a premise we have strived for in the design of the proposed framework for a program.

To support a flexible adaptation, we use The European Qualifications Framework (EQF) (European Commission, 2008) as framework for the proposed module. The EQF is a common European qualification framework for education, which aims to function as a translation device making national qualifications comprehensible and transparent across borders.

2 Theoretical backdrop

2.1 Partnerships

Higher education institutions are commonly perceived to be the primary agent for preparing teachers and thus have the overall responsibility for teacher education. Teacher education has in many countries become highly academic at a graduate level, however at the same time there is also an international trend often called the 'practice turn' in teacher education. The strive to make teacher education more academic and at the same time, more practical, creates a tension between different perceptions, cultures and expertise (Murray, Swennen, & Kosnik, 2018). Teacher education institutions are expected to establish partnerships with the practice field (schools), as suggested in EU documents, such as *Supporting Teacher Educators* (2013) and *Strengthening Teaching in Europe* (2015), and in Norwegian national steering papers (Norwegian Ministry of Knowledge, 2017). Recently a report, *Partnerships in Teacher Education* (Norwegian Ministry of Knowledge, 2020) which stresses the importance of establishing partnerships between universities and the practice field and highlights the many challenges, has been published. There are tensions in such partnerships as the partners have two different foci, educating children and educating teachers, which represent different cultures and different expertise. However, they also have a shared primary goal, to improve education at all levels.

Partnership is defined as 'a relationship resembling a legal partnership and usually involves close cooperation between parties having specified and joint rights and responsibilities' (<https://www.merriam-webster.com/dictionary/partnership>). Smith (2016) defines partnership "as an agreement between teacher education institutions and stakeholders of education who work together towards a shared goal to improve education" (Smith, 2016, p. 20). Sandholtz (2002) suggests that there are basic conditions that need to be in place to strengthen school-university partnerships. The partners should trust each other and be open to listening to and accepting different opinions and solutions. Partners should be receptive of and respect different forms of expertise and see value in it for the common interest. Likewise, partners often represent various types of organisations or institutions with different missions and limitations, however, instead of seeing differences as an obstacle to cooperation, it can be viewed as a benefit and provide opportunities for mutual learning (Sandholtz, 2002). Furthermore, a partnership involves risks, especially when the aim is to develop, to go beyond the comfort zone of all partners, and it can be time-consuming (Lemke & Sabelli, 2008).

Moreover, Sandholtz (2002) expresses doubts regarding whether partnerships can function unless the partners plan for an ongoing commitment, especially in education where the achievement of goals are difficult to measure and might only be envisioned in a long-term perspective. Partnerships are based on long-term commitment and a genuine aspiration to work together to improve education at all levels.

2.2 Competence building

The underlying thesis of the University School idea is in alignment with Bullough et al. (2002) who argue that the practical component is an important aspect of teacher education. This claim is supported by research among student teachers which report that students of teaching perceive the practicum as the most important component of their teacher education (Niemi, 2002; Smith & Lev-Ari, 2005).

Moreover, there is an emerging conception of seeing teacher education in

“a career wide perspective, consisting of three stages, initial, induction, and in-service education. In all three stages, mentoring activities are given a central role. During the preparation for the profession, initial education, mentors have the responsibility of introducing the practice field to professionals-to-be. During induction, mentors become supporters and guides for the novice, whereas in the phase of in-service education, formal mentoring by appointed mentors and informal collegial mentoring within communities of practice are found to promote professional learning” (Smith, 2015, p. 284).

Thus, teacher education takes place in different contexts, university and school, and these should create partnerships to mutually draw on each other’s expertise for the benefit of education in general.

Practicing teachers who mentor student teachers or colleagues, act in that role as teacher educators, and are often called school-based teacher educators. Smith (2015) claims that when acting as teacher educators, teachers practice a profession (of teacher educators) within their primary profession (school teachers). The question raised is if all experienced teachers can be mentors or is mentoring a different experience than practicing the profession? The claim we make is that mentoring is not the same as teachers’ first order professional practice (Murray & Male, 2005), it is a profession within the profession in which mentoring takes place. Teaching children is a different practice from mentoring adults prior to or at the entrance of their professional career, and we claim that in a University School partnership there is a need for competence building for school-based teacher educators (mentors) to develop a second-order professional practice, educating teachers (Murray & Male, 2005). Teaching experience does not suffice to qualify for acting as a mentor. Mentoring is about supporting the search for professional self-understanding and professional growth of new professionals. The target audience of mentoring are adults often at the starting point of a professional career. Thus, mentoring becomes a distinct profession within the teaching profession.

The main differences between mentoring and teaching can be summarised in the following table:

Table 1, Differences between mentoring and teaching (Smith, 2015: 291)

	Teaching	Mentoring
content	subjects (math, history, etc.)	Teaching about teaching
age	children	adults
theoretical foundation	pedagogy	andragogy
hierarchy	explicit, accepted	Implicit, problematic
relationship	teacher-student	collegial
assessment	explicit formative and summative	Explicit formative, implicit summative
Research (added in this document)	problem-based teaching	R&D in cooperation with university

In a University School partnership, school-based teacher educators must be empowered with the competence to act as teacher educators. However, there are university-based teacher educators with little or out-dated experience with the school of today (Ulvik & Smith, 2019). They have to be empowered with knowledge about a culture and expertise to which they have become distant. Thus, structured mutual competence building is therefore a fundamental requirement for a successful University School partnership. This can only be done when mutual meeting points are created, in what Zeichner (2010), among others, calls the third space.

2.3 Capacity building

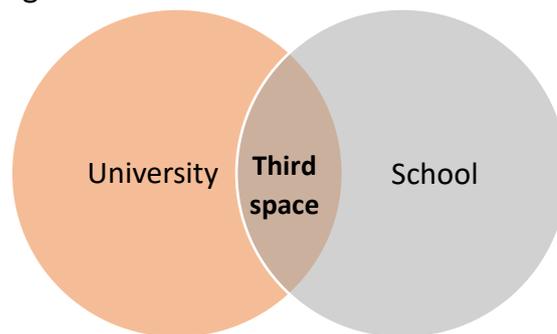


Figure 1: Third space between university and University Schools

The school has a primary goal and expertise of teaching children, whereas the university has a primary goal and expertise of teaching adults and doing research. In the third space they cross boundaries and engage in mutual learning. Capacity building is about creating the infrastructure for mutual learning a partnership characterised by equality and mutual respect to take place.

3 Proposed framework for an educational module for school-based teacher educators

3.1 Implications from IO1 and IO2

IO1 describes University School concepts in five universities on basis of document analyses, using a conceptual framework focusing on national, institutional, organizational and activity views. The results show that the main similarity between the University School models is the intention to cooperate and dovetail players in school and university regarding R&D activities, teacher education program development and school development (Gerholz et al., 2020, p. 51). Many activities focus on educational module development in teacher education, while only a few are oriented towards university-school-teachers' professionalization. This impression is further supported by IO2's collection of practices, which contains only one single example (the USSiT-case) of an implemented formal qualification module aimed at teachers and leaders in University Schools. The USSiT-case will be presented towards the end of this document.

On bases of IO1 two main processes are identified; R&D and professionalization. IO2 identifies a third process which is school improvement. A so-called helical model is presented visualizing that the three mentioned processes are intertwined, in the same way as threads in a DNA-molecule.

3.2 Framework and level for a cross-national educational module

To facilitate the translation of the EdUSchool Educational Module to different national and local contexts, we use The European Qualification Framework (EQF) as a basis in the design of the study module:

“The European Qualifications Framework (EQF) relates the national qualifications systems and frameworks at all levels in education and training together around a common reference for the European Union. In practice, it functions as a translation device making national qualifications more readable abroad. This should help learners and workers wishing to move between countries or change jobs or move educational institutions at home” (European Commission, 2008).

The learning outcomes in EQF are identified as knowledge, skills and competence.

The module is proposed at master's level corresponding to EQF's level 7. The learning outcomes relevant to level 7 are:

- highly specialised knowledge, some of which is at the forefront of knowledge in a field of work or study, as the basis for original thinking and/or research
- critical awareness of knowledge issues in a field and at the interface between different fields
- specialised problem-solving skills required in research and/or innovation to develop new knowledge and procedures and to integrate knowledge from different fields
- managing and transforming work or study contexts that are complex, unpredictable and require new strategic approaches
- taking responsibility for contributing to professional knowledge and practice and/or for reviewing the strategic performance of teams

3.3 EdUSchool Educational Module – a proposal

ECTS	15
Level	Master-level (7)
Knowledge areas	<ul style="list-style-type: none"> • Mentoring as a Professional Practice • Scientific Methods/Practice-related inquiries • School Development • Frames of teacher education programmes
Learning outputs; knowledge	<p>The candidate</p> <ul style="list-style-type: none"> • has in-depth knowledge of how R&D and practice-related inquiries develop student teachers' practice and her/his own mentoring practice • has knowledge about various mentoring models and can apply this knowledge in staff development and school improvement • has in-depth knowledge about the role of feedback
Learning outputs; skills	<p>The candidate</p> <ul style="list-style-type: none"> • Can conduct supervised R&D and practice-related inquiries according to acknowledged research methods and ethical norms • can apply different strategies to critically explore personal and others' mentoring practice • can provide critical constructive feedback
Learning outputs; general competence	<p>The candidate</p> <ul style="list-style-type: none"> • can apply knowledge and skills in professional collaborations • can integrate mentor knowledge and skills in school improvement activities • can apply knowledge and skills to develop clarifying and strengthening the role of teacher educators • can communicate practical knowledge to students and colleagues
Working methods	<ul style="list-style-type: none"> • Flipped classrooms (online lectures) • School-based communities of learning (discussing lectures and reflecting on experiences) • Individual readings of literature, discussed in school-based learning communities
Assessment	<ul style="list-style-type: none"> • Team practice-related inquiry • Individual portfolio

The above framework presents required theoretical knowledge and practical skills at the completion of the educational module. Emphasis is put on team as well as individual learning which is supported by the theoretical framework presented above. Moreover, a major aim with the module is that school and university-based teacher educators develop a disposition of inquiry in relation to their own and others' practice. In this way the professional development of the individual and various teams creates an infrastructure to the school development and improved teacher education. We have also found it important to include some of the experiences from online courses during the Covid19 lockdown, thus

we suggest that the module adopts a blended format with informative lectures presented online, followed up by discussions in face-to-face learning communities (if possible).

4 Framework of the Educational Module as exemplified and implemented at NTNU

Already in 2016 NTNU implemented an educational module for mentors in the newly established University School project. Below, this module is presented followed by evaluations and lessons learned.

4.1 The USSiT-case

The USSiT-case is based on the educational module "*Practice supervisor education at the University-schools at the Norwegian University of Science and Technology*" which consist of two modules of 7,5 ECTS; one in mentoring and one in action-oriented R&D. The educational module was implemented in two newly appointed University Schools, a secondary school with 430 students and an upper secondary school with 1100 students in Trondheim in 2016 as a first step to build collaborative capacity in these schools. These schools gained their status as University Schools in 2015 as a result of a comprehensive application process where one of the most important criteria was that a unified teaching staff stood behind the application.

135 teachers, representing over 90% of the teachers in the two University Schools, completed the module in which both teachers and leaders participated. The module was implemented in the teachers' collective working time ¹, which implied that the school's management implemented organizational changes and adaptations to facilitate the course work throughout the entire course.

The overall aim of the educational module is to develop teachers' professional competence as mentors in order to improve teacher students' practicum at the University Schools, and thereby to strengthen teacher education at NTNU. The target group is teachers and leaders in the University Schools.

In line with the USSiT's principles of equality and co-creation, both development and implementation of the educational module were outcomes of co-created processes between actors from the University Schools and the university. A working group consisting of a professor from the university, the project leader, and coordinators from each of the University Schools were appointed to take responsibility for the whole process. In addition, several resource-teachers were appointed. These were experienced mentors contributing to the on-site study-activities. To ensure organizational anchoring, the management of the University Schools was in constant dialogue with the teachers' unions during the process.

The implementation of the educational module was school-based, meaning that the education was offered on site, adjusted to the school's need and context. The R&D projects which were part of the assessment process, were conducted in the teachers' classes, and for some, in collaboration with the teacher students. An example of this was mentors working with student teachers on how to use Lesson-Study for professional development and improved practice.

¹ In Norway the teachers' working time is regulated through a centrally agreed working time agreement. The number of working hours per year is 1687,5. The largest part of the time is physically tied to the school related to individual teaching-plans and collective meeting-plans. A minor part is not explicit physically tied to the school and controlled by the teacher.

4.2 The USSiT Educational Module

The USSiT educational module aims to integrate experience-based and knowledge-based knowledge contributing to the development of new knowledge both at individual and collective levels in the University Schools. This is supported by an adapted theoretical framework and the use of multimodal and bodily working methods (Engvik & Östern, 2017).

The full educational module consists of two modules of 7,5 ECTS which can be fitted into a masters' degree. The objectives of the modules are as follows:

*Module 1: **Mentoring** - The will:*

- contribute to development of the student's professional identity as mentors within their subject area.
- contribute to school development by integrating mentoring as part of the school's professional development work.
- qualify for mentoring of teacher students at the lower secondary level and upper secondary school.
- provide an increased understanding of professional development of mentors and how expanded competence as a practice supervisor can contribute to developing the teacher students' competence in a practice community.

*Module 2: **Research & Development** - The module will*

- provide insight into, and experience in exploring and critically analysing mentor practices and mentor processes.
- through an independent R&D project, under supervision and in line with research ethics norms, enable the participants to apply their knowledge and skills in a professional collaboration between the mentor and the teacher student.
- through knowledge of development work and practical research, provide a basis for improving both the teacher student's practice and the mentor's own mentor practice.

Process-learning is a central principle in the study emphasizing dialogue, group-work, practical exercises, and other forms of skills development. Participants gain experience with using various strategies which can support their work as mentors, both individually and in communities of practice at the school. The teachers participate and work with their colleagues in groups of three to four to plan and conduct action-learning projects that forms the basis for their examination text.

4.3 Results from evaluation and research

An evaluation conducted by Engvik and Östern (2017) showed that the main objectives of the educational module were achieved. On basis of analysis of the candidates' exam papers they found that the modules had an impact on their professionalization through development of a common professional language related to mentoring and teaching. The evaluation was also based on written feedbacks from the candidates who reported that the study contributed to positive changes in both mentoring and teaching practices at the University Schools.

In their study of the USSiT-case, Emstad and Sandvik (2020) had as a starting point that the implementation of the educational module was a success in that 90% of the teachers at the University Schools had completed the course, with good outcomes and with positive feedback from teachers and leaders. Emstad and Sandvik concluded that the main reasons for the success was related to the close collaboration between actors from the university and the schools which generated relations of trust enabling them to negotiate and renegotiate conceptual and organizational solutions related to the

educational module such as the school-based implementation, adaptations of working methods and of other curriculum issues. The Emstad and Sandvik study was completed in 2020, and since then there has not been any new modules offered due to the Covid-19 Pandemic.

5 Implications and conclusions

In the following, we first summarize the most important consequences from the theoretical backdrop and the experience-based sources (IO1, IO2 and the USSiT-case) specified as relational, knowledge and contextual implications for the EdUSchool Educational Module, then we conclude with regarding the relevance and significance for the development of the actual educational module.

5.1 Implications

5.1.1 Relational implications

In the theoretical backdrop, mutual trust and respect are emphasized as crucial for maintaining a sustainable partnership described as development of a third space for collaboration between actors from the different institutions to establish symmetrical relations between them. In the USSiT case, this was achieved by actors from university and schools establishing a space for co-creation of both development and implementation of the study-program. Emstad and Sandvik's (2020) study shows that this was an important prerequisite for the success of the process in the USSiT- Educational Module.

Conclusion: It will be necessary to establish co-creation arenas (third spaces) between actors from universities and schools that allow for renegotiation and contextualization when implementing the EdUSchool Educational Module.

5.1.2 Knowledge implications

In the theoretical backdrop teaching about teaching, i.e. professional mentoring, and R&D, are highlighted as necessary knowledge domains to ensure professionalism, and which requires sufficient capacity and specialization in the University Schools. In addition, the collegial element is emphasized as an important aspect of the knowledge work. This is in line with the experiences from IO1 and IO2, which revealed that professionalism and R&D, together with school development, are the most important knowledge areas in the partnership concepts. This also applies to the USSiT-case.

The triple-helix model used in IO2 indicates an intertwining and integration of the three mentioned knowledge domains. In the USSiT-case such an integration was realized, and both the evaluation (Engvik & Östern, 2017) and the case-study (Emstad & Sandvik, 2020) show that this knowledge approach contributed to both individual and organizational learning in the University Schools.

In addition, the theoretical backdrop emphasizes the importance of mentoring being regarded as “a profession within the profession” (Smith, 2015). To ensure this, it is important that educational modules are formalized enabling incorporation into further study-programs. This was done and proved important in the USSiT-case where the educational module can be integrated into a master's program.

Conclusion: EdUSchool Educational module is based on the integration of the knowledge areas; mentoring, R&D and school development. The integration is reflected in all aspects of the module (goals, working methods and syllabus). Furthermore, master's level is proposed to ensure specialization.

5.1.3 Contextual implications

In the theoretical backdrop, the collegial aspect of professional mentoring is emphasized. This is significant for the design of the actual educational module indicating a focus on both individual and organizational learning. In the USSiT-case, the school-based approach contributed to a collegial focus that resulted in organizational learning.

Conclusion: Developing a contextualised educational module for teachers and leaders at University Schools.

5.2 Conclusions

The goal of IO3 is to develop an educational module for teachers at University Schools. In this document we have presented a framework for an educational module which can be adapted to various national and local contexts. This is done in acknowledgement of the fact that education, including teacher education, is contextualized, however, our aim is to propose a shared European framework in the effort of the EdUSchool project to develop a shared understanding and language of the University School concept in Europe.

The proposed educational module is a continuation of IO1 and IO2 in the EdUSchool project and supported by a theoretical backdrop. Consequently, we have proposed a framework for an educational module. As an example of adaption, we have presented a case from NTNU, the USSiT Educational Module, and lessons learned as documented in evaluations of this module. Finally, we suggest implications at relational, knowledge, and contextual levels which ought to be taken into consideration when adapting the proposed framework. The overall conclusion is that we strongly recommend a school-based approach as a principle for implementing the EdUSchool Educational Module.

6 Decontextualization of model: Examples of modules from the EdUSchool partner institutions

In contrast to NTNU, the other project partners do not yet have standardized training for University School teachers in the form of appropriate modules. For this reason, and to exemplify the flexibility of the module, the project group developed context sensitive educational modules on basis of key questions. This was done to have a similar structure across the institutions. The following key questions focus on the module to prepare University School teachers for their role. The module can be implemented as it is or adapted to the various contexts to align with institutional and national frameworks. Since University Schools as such are not yet fully implemented and institutionalized in Portugal, the development of the educational module can be understood as a contribution for their future development. Portugal thus functions as a transfer field in the broader sense. The project partners with already established University School concepts can therefore be understood as transfer fields in the narrow sense.

6.1 University of Bamberg

6.1.1 Context

The partnership between the university and University Schools in Bamberg business education spans various levels of professionalization of pre-service and in-service teachers. The partnership is characterized by discursive and goal-oriented collaboration to advance the interrelation of science and research, school development and school practice.

Within the framework of the EdUSchool project, this collaboration has already been further expanded and deepened through different teaching formats as well as institutionalized exchange between

university and school. As a result of the expansion of the partnership, the following educational modules will be presented to further support the professionalization of in-service teachers to accompany teacher education students as mentors in a professional way.

In total, three modules are presented, which can be understood as a three-part in-service training course for future University School teachers. The goal is to train participating teachers as mentors to guide students and support them in the learning and development process as well as to sensitize the teachers for research-oriented teaching.

6.1.2 Planned module(s)

For the promotion of professionalization of mentoring teachers at University Schools, we propose three modules as in-service training for University School teachers. Module 1 focuses on mentoring and counselling of teacher education students; module 2 describes the use of action fields in schools and development of observation; module 3 considers research-oriented development. A brief description of the modules, learning outputs and working methods are described in the following sections.

Module 1: Mentoring and counselling of teacher education students

ECTS	
Level	Master-level (7)
Learning outputs;	<ul style="list-style-type: none"> • Participants know different models and concepts of mentoring and can orient their own actions in the sense of a transfer to them. • Participants are aware of their roles as mentors for the development of the teacher education students. • Participants will be familiar with various communication strategies and will be able to apply them in communicating with students. • Participants know how to give constructive feedback. • Participants can independently design feedback processes with students. • Participants learn to empathize with students and develop an understanding of their learning processes to become a professional teacher. • has in-depth knowledge of how R&D and practice-related inquiries develop student teachers' practice and her/his own mentoring practice • has knowledge about various mentoring models and can apply this knowledge in staff development and school improvement • has in-depth knowledge about the role of feedback
Working methods and assessment(s)	<ul style="list-style-type: none"> • Individual readings of literature and discussions • Role play • Case studies processing

Module 2: Action fields in schools and development of observation

ECTS																															
Level	Master-level (7)																														
Learning outputs:	<ul style="list-style-type: none"> • Participants know the four areas of action (action fields) – class (lessons), subject area (course of occupation), school (organisation of school) and environment (stakeholders). • Participants can distinguish different teacher actions 'teaching and educating', 'counselling and moderate', 'diagnose and assess', 'innovate, change and design' as well as 'manage and organise'. • Participants are familiar with the interaction of the action fields and the teacher actions within the framework of the observation matrix. <table border="1" data-bbox="584 651 1385 1025"> <thead> <tr> <th></th> <th>Class (lessons)</th> <th>Subject area (course of occupation)</th> <th>School (Organisation of school)</th> <th>Environment (stakeholders)</th> </tr> </thead> <tbody> <tr> <td>Teaching and educating</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Counselling and moderate</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Diagnose and asses</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Innovate, change and design</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Manage and organise</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <ul style="list-style-type: none"> • Participants can develop tasks for student reflection for each field in the observation matrix. • Participants can evaluate and reflect on student observations and experiences based on the observation matrix. • Participants develop a sense of student reflection processes. 		Class (lessons)	Subject area (course of occupation)	School (Organisation of school)	Environment (stakeholders)	Teaching and educating					Counselling and moderate					Diagnose and asses					Innovate, change and design					Manage and organise				
	Class (lessons)	Subject area (course of occupation)	School (Organisation of school)	Environment (stakeholders)																											
Teaching and educating																															
Counselling and moderate																															
Diagnose and asses																															
Innovate, change and design																															
Manage and organise																															
Working methods and assessment(s)	<ul style="list-style-type: none"> • Systematic analyses and discussion of student's experience reports • Individual portfolio with developed observation tasks based on the observation matrix 																														

Module 3: Research oriented development

ECTS	
Level	Master-level (7)
Learning outputs:	<ul style="list-style-type: none"> • Participants know different didactic models for the development of practical teaching lessons. • Participants will be able to apply theoretical models when planning lessons in sense of the connection between theory and practice. • Participants will be able to apply theoretical models for school development.
Working methods and assessment(s)	<ul style="list-style-type: none"> • Individual reading of literature • Systematic analyses and discussion of good-practice-learning materials for teaching lessons • Developing own teaching material for school lessons

6.1.3 Co-creating arenas, knowledge areas and professionalization

At the core of the modules as in-service training is the goal of acquiring the skills needed to guide teacher education students professionally and to work in partnerships with the university. The university serves as a place of learning where the necessary expertise can be developed on the basis of research and evidence. This knowledge is to be reflected through practical activities as well as observations with in-service teachers. This reflection enables the transfer of scientific knowledge into practical application contexts. By aligning learning venues in terms of their activities to support students in building reflective knowledge and testing their current teaching-related skills, existing capacities can be better utilized without using additional resources in schools or the university. In addition, further exchange between university and schools will enable professionalization and reflection among lecturers and teachers. The three modules explicitly address the different knowledge areas of Mentoring, Reflection and Observation, and research-oriented development of teaching materials. The approach will be both theory-based and empirical, so that theoretical foundations are sufficiently developed in the participants. In addition, the modules have a high practical relevance in order to incorporate the teachers' experiential knowledge. Thus, all components are provided to prepare prospective mentors in the best possible way for mentoring students. Mentoring, or counselling in the learning and development process in general, should never be undertaken without appropriately qualified preparation. The high professionalism of the mentors is a premise for professionalization of the students. Therefore, the three modules take up the different aspects.

6.1.4 The education model's contribution to the University School concept

The three modules ensure the quality of mentoring and guiding provided to students by University School teachers. Thus, it's all about quality management. The transfer in both directions, theory to practice and vice versa then works optimally. In this way, students do not experience a gap between theoretical and practical training, but rather both parts complement each other optimally during their studies.

6.2 FAU Erlangen-Nürnberg

6.2.1 Context

The educational context of the University School module at the University of Erlangen-Nuremberg is characterized by a combination of mentoring at the University Schools, media-supported self-study and regular meet up with the students at the university. The combination is revised regularly.

Media-supported self-study in regular groups: Students are divided into fixed home groups of four to six students. They deal with the self-study material in the homegroup and individually. In addition to reading, students are given learning assignments, produce complex action products, keep a didactic diary, and engage in several forms of self-reflection exercises. Students work in media-supported self-study with a learning management system.

Mentoring by teachers at the school: Each student core group receives a permanent mentor at a University School. University School faculty members are assigned to mentors. These teachers are prepared for the university's task and receive suggestions for mentoring and dealing with the same content basics. The mentors use the developed self-study material and use the technical infrastructure themselves. The mentors' activities count towards their teaching obligations.

Regular meet up with the students at the university: Students meet regularly for a systematic examination and review with the module supervisor and mentors to deepening the acquired competencies, evaluate learning assignments of the students, and discuss experiences and concepts.

The Nuremberg University School Model was designed from the beginning to complement the second phase of teacher education. The model cannot and does not intend to replace the second phase.

The University School concept is anchored in all four semesters of the Master's programs through related courses. In the first and second semesters of the Master's program, the curricula include the course "Didactics of Vocational and Business Education", which is compulsory for all students and comprises 20 ECTS, i.e. the equivalent of 600 working hours. The course follows the Nuremberg didactics model and includes university attendance events, events at the University Schools, and extensive, differentiated self-study.

In designing the University School course, the typical university teaching formats of "lecture" and "tutorial" were replaced by teaching and learning forms of integrated learning (blended learning). This combines media-supported self-study, blocked university face-to-face events, mentoring at University Schools, and other curricular elements.

In addition, in the second master's semester, the module "Empirical Research" is obligatory for all students, with a volume of 5 ECTS. In this module, students work on research projects and University Schools in the sense of research-based learning. Depending on the problem, the projects are researched empirically in a quantitative and/or qualitative way. The process of empirical research, which forms the basis of the projects, ranges from developing an idea, developing a research question and research status, preparing research, designing research and collecting data to reporting. The two modules, Didactics of Vocational and Business Education and Empirical Research, are thus based on transparent processes.

6.2.2 Planned module

ECTS or workload

For the future, a combination of formal learning and on-the-job learning to support colleagues is planned. In this context, the extensive media support and the support peer-to-peer in schools is to remain unchanged. However, since ECTS points are awarded based on formal learning, this implementation cannot be considered a central goal.

Level (EQF, NQF)

Considering the module, the learning outcomes of EQF level 7 are taken into account to ensure permeability in the master's program. Qualification in the EQF Level 7 includes,

- the ability to develop a critical awareness of knowledge issues in a field and at the interface between different fields.
- A critical awareness of knowledge issues in a and interface between different fields.
- Besides, specialized problem-solving skills, managing and changing intricate work or study contexts
- Managing and changing work or study contexts
- and taking responsibility for reviewing and teams' strategic performance.

ECTS	7,5
Level	Master-level (7)
Knowledge areas	<ul style="list-style-type: none"> • Mentoring as a Professional Practice • Scientific Methods/Practice-related inquiries • School Development
Learning outputs; knowledge	<p>The candidate</p> <ul style="list-style-type: none"> • has in-depth knowledge of how R&D and practice-related inquiries develop student teachers' practice and her/his own mentoring practice. • has knowledge about various mentoring models and can apply this knowledge in staff development and school improvement. • has in-depth knowledge about the role of feedback.
Learning outputs; skills	<p>The candidate</p> <ul style="list-style-type: none"> • can conduct supervised R&D and practice-related inquiries according to acknowledged research methods and ethical norms. • can apply different strategies to critically explore personal and others' mentoring practice. • can provide critical constructive feedback.
Learning outputs; general competence	<p>The candidate</p> <ul style="list-style-type: none"> • can apply knowledge and skills in professional collaborations
Working methods/Learning design patterns/instructional design	<p>The concept of mentoring is an essential part of the Nuremberg University School concept, as already briefly described in the first questions. Selected teachers supervise up to five students as mentors and offer help in putting theory into practice. At the beginning of their work, the mentors, who continue to perform regular teachers' tasks at the schools, are prepared for their additional task. Regular meetings with the chair follow this. In addition to mentoring, the mentors' activities also include handling the students' self-study material and, in this context, attending presence sessions at the university. Within the respective school, they have a multiplier function for the remaining colleagues and act as the liaison between the school and the university. A significant advantage of the Nuremberg concept is that the University Schools are always also seminary schools, ensuring the integration of trainee teachers and seminary teachers and enables an expertise-based exchange between all parties involved. The concept is also intended for the mentors to support each other and to promote the further development of the mentors.</p> <p>The combination of different curricular vessels, the event's temporal scope, and the cooperation with several external partners lead to a very complex structure. Such complexity requires a detailed explanation of the components and transparent regulations, including organization, collaboration, and testing. The regulations and descriptions of the individual elements were summarized in a detailed bulletin, which forms the basis for the cooperation of all university stakeholders. This medium is provided in a wiki format enabling the access of each participant anytime. In general, the working methods combine formal learning with a vast variety of peer learning and just-in-time-learning.</p>
Assessment	<p>The University School combines "study combines and theory and practice" and makes it possible for students to experience a teacher's extensive activity profile at a very early stage of their education, thus contributing to</p>

	<p>their profession choice. On the other hand, University Schools' implementation should succeed in "combining the first and second phases of teacher training into an overall concept." University Schools, study seminars, and universities cooperate closely with each other and achieve synergy effects through joint work on pedagogical issues and provide impulses to develop vocational education further. Subject to this concept, there is <i>no assessment</i>, strictly speaking. There is no examination of the learning success but an individualized assessment by the students of transfer success. In other words, not what has been learned, but how the learned is implemented. The concept shows teachers how to adjust their changing perspective from "teacher" to "university school teacher ". Continuous communication among all stakeholders can help realize adherence to the concept, as evidenced in previous answers (see Working methods / Learning design patterns / instructional).</p>
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6.2.3 Co-creating arenas, knowledge areas and professionalization

The school has a primary goal and expertise of teaching students, whereas the university has a primary goal and expertise of teaching adults and doing research. In the third space they cross boundaries and engage in mutual learning. Capacity building is about creating the infrastructure for mutual learning a partnership characterized by equality and mutual respect to take place.

For purposes of ensuring the third space, the concept of the EdUSchool Triple Helix is addressed. The Helix consists of three elements, which are intertwined, making them dependent on each other and making it impractical to apply each separately:

- EdUSchool facilitates research & development (R&D), which is a social process, participatory, collaborative, helical, practical and scientific.
- EdUSchool enables a professionalization based on abstract concepts and concrete experiences in schools.
- EdUSchool enables a process of school improvement, respectively, a process of improvement of the integrated institutions.

6.2.4 The education model's contribution to the University School concept

The Nuremberg University School does not see itself as a fixed entity, but its concept is subject to constant change. Therefore, it is continuously developed and adapted to changing framework conditions and new scientific findings. A firmly anchored quality management system also ensures the quality of the Nuremberg University School concept. In addition to quality assurance, continuous efforts are made to eliminate existing weaknesses and build on strengths. The further development of the concept is sought, among other things, through the structured solicitation of feedback on content and concept from internal and external stakeholders.

Considering the objective of this survey, mentors play an essential role. In this context, experiences that are developed into expertise are an important point of reference. Through additional feedback to mentors, compelling movements for further education can be developed, and the expertise of the "university school teacher" can be disseminated. In addition, other impulses for improvement can be given to all participants.

6.3 Masaryk University

6.3.1 Context

Educational module will be offered at MU as a lifelong learning course for teachers of all school levels – in-service teacher training in the length of 2 semesters, 150 hours. This number of hours consists of

30 hours devoted to self-study, 30 hours to practice at the workplace (school), 10 hours to intervention meetings in smaller groups and 80 hours to common meeting in the whole group.

Lifelong learning courses at MU have to be accredited by Ministry of Education, Youth and Sports. The courses are financed from the project resources or from school budgets (employers of teachers). Graduates receive certificates with a number of hours attended.

The course is primarily intended for teachers of faculty schools, who are involved in students-teachers practical education. However, the course can be opened for other interested teachers according to the capacity of the course. The capacity will be approx. 15 – 20 participants in a course/class.

In the Czech Republic, completing a course in mentoring for supervising students on practices at schools is not required yet. However, nowadays there are changes being prepared at the Ministry of Education, Youth and Sports concerning the education of teachers. A part of those changes is also devoted to the proposals concerning requirements on supervising teachers (mentors) in schools. The proposed course therefore well reflects the contemporary aims of the Ministry of Education, Youth and Sports (Strategies 2030).

6.3.2 Planned module(s)

ECTS	Lifelong learning courses are not credited
Level	The educational course is designed for the graduates of master's degree programme in teaching (Level 7 of the EQF). The course will be offered within lifelong learning. Completion of the course does not lead to higher qualification of graduates in their profession.
Knowledge areas	<ul style="list-style-type: none"> • Mentoring as a Professional Practice • Scientific Methods/Practice-related inquiries • School Development
Learning outputs; knowledge	<p>Graduates will</p> <ul style="list-style-type: none"> • understand the mentoring process, its phases and the topics of relations in mentoring. • be able to orientate within humanistic and systemic approaches in the work with students. • have learnt the theories of experiential and reflective learning. • have learnt a range of tools and procedures used in mentoring. • understand the specifics of teacher education, educational needs of students-teachers, organization of practices. • will understand group dynamics. • will understand the specifics of managing changes based on action research.
Learning outputs; skills	<p>Graduates will</p> <ul style="list-style-type: none"> • have learnt how to use tools for aiming, contracting and mentoring process planning. • have learnt how to use the techniques and tools such as: active listening, ways of questioning, documentation materials, self-reflective questionnaires etc.

	<ul style="list-style-type: none"> • be able to establish and maintain the relationship with a student. • be able to guide reflective groups of students, use different approaches and the techniques of reflective practice. • have learnt how to plan and manage an action research, process and interpret data and suggest evidence-based changes. • be able and willing to use self-reflective approaches.
Learning outputs; general competence	<p>Graduates will</p> <ul style="list-style-type: none"> • be able and willing to supervise students on their practices • will know their own competences • will be able to recognize and formulate their educational needs • will be willing to share their needs in supervision. • will result in acquiring knowledge and practical skills and also in an improvement of self-reflective, relational and communicative skills.
Working methods	<p>Working methods will contain a combination of self-study and meetings in person:</p> <ul style="list-style-type: none"> • self-study of recommended literature • discussion lectures (mentoring theory) • teamwork • a training of mentoring in teams, accompanied by reflection (in the model of mentor – mentee – observer) • intervision meetings in smaller groups – reflections, practices, problem-solving etc. • school’s individual research investigation <p>Comment: The experience with supervising students of MU on their practices and also the experience with support of colleagues-teachers at the workplace will be used for reflection, as not all of the participants will have students on practices in that particular time.</p>
Assessment	<ul style="list-style-type: none"> • Participants will be monitored during their training in mentoring supervision (in small groups) and will get feedback from both the course supervisor and their colleagues/co-participants. • Participants will keep a reflective logbook, which will be used for both partial and final evaluation. • Course students/participants’ attendance of 80 % will be required during joint sessions. • Participants will be encouraged to evaluate the course using the information system of MU. • Lecturers will demand continuous evaluation throughout the course.

6.3.3 Co-creating arenas, knowledge areas and professionalization

The course is primarily aimed at the field of **professionalization** of teachers – mentors, who supervise students of education on their practices.

The secondary impact is the support and **improvement of cooperation** between MU and faculty schools. Participants of the course – graduates will be regularly invited into the courses for students of MU.

Another impacted area will be school improvement. During their studies, participants will manage an action research on their workplace, in best case with the aid of students of education on a practice in the given school. On the basis of gathered data they will suggest changes in the school and moreover, changes in the implementation of student practices.

The execution of the action research may then become a part of their final degree theses – master's degree theses of students of teaching. By doing so, the milieu of Masaryk University and faculty schools will become more closely intertwined.

A part of the course will be the topic of research and development. During the course, participants will be working on evidence-based change. This change may concern both the faculty school and the implementation of practices. Both the supervisors of practices and the students on practices should cooperate on this research.

6.3.4 The educational modul's contribution to the University School context

In the Czech Republic, this concept of interconnection between professionalization of teachers and research and development is rarely worked with. The proposed course will enable interconnection of faculties and faculty schools.

6.4 University of Lisbon

6.4.1 Context

In the Portuguese context, University Schools are a new concept. Therefore, this module is seen as a critical contribution for their future development. Considering that for all future participants this will be a novelty, it will be critical to provide them with the necessary educational opportunity to introduce this concept. The Educational Module will be supported by the Portuguese EdUSchool team and implemented at one of the partner schools at IEULisboa. With this goal the initial participants will be both professors from the University of Lisbon who engage in initial teacher education partnerships with partner schools and also local school-based teacher-mentors who supervise student-teachers during their practicum.

6.4.2 Planned module(s)

The proposed EdUSchool Module is composed of two separate Curricular Units with 7,5 ECTS each, adding up to a total of 15 ECTS. This design was preferred given its greater flexibility for the organization of smaller school based education modules that can be enrolled separately and also given its possible alignment with our ongoing master programs composed by a set of Curricular Units where each accounts for 7,5 ECTS (usually 4 per semester for a total of 30 ECTS), making it possible to integrate them as part of these programs. The proposed Curricular Units can, in this manner, be used not only as part of the development module for University School partnerships, but also be included as part of existing Master programs such as the program in Initial Teacher Education, and the program on Mentoring and Guidance of Professional Practice, offered to experienced teachers.

We envision this module as the shared responsibility of university professors working collaboratively with school based teacher educators who can act as part of and instructional team sharing the

teaching load for the module. This way, we expect to enrich the learning experience for the participating teachers with complementary contributions from instructors with different backgrounds and experiences.

The two proposed Curricular Units for the Module are:

Curricular Unit 1 – Peer observation Mentoring and Feedback

Curricular Unit 2 – Analysing and Discussing Professional Practices for Teacher and School Development

These Curricular Units share common goals focused on the development of the participants skills needed to act as school based mentors, but also provide a two step process . On the first: Curricular Unit 1 – Peer observation Mentoring and Feedback, participants will be introduced to the discussion of mentoring models and scientific methods for practice related inquiries aiming school development, through the discussion and sharing of experiences from their own schools, including the discussion of initial peer observation experiences. The second: Curricular Unit 2 – Analysing and Discussing Professional Practices for Teacher and School Development, shares the same goals but aims to go further with intensive practical diversified peer observation experiences in order to allow participants to practice and discuss different observation, mentoring and feedback contexts. Participants are expected to work both individually as well as engage in small group work and large group discussions. An intended biproduct of this educational experience is the development of a professional learning community where the participants engage in the constructive discussion of their practices contributing the larger goal of school development and improved teacher education.

Curricular Unit 1 – Peer observation Mentoring and Feedback

ECTS	7,5
Level	Master-level (7)
Knowledge areas	<ul style="list-style-type: none"> • Mentoring as a Professional Practice • Scientific Methods/Practice-related inquiries • School Development
Learning outputs; knowledge	<p>The candidate</p> <ul style="list-style-type: none"> • has in-depth knowledge of how R&D and practice-related inquiries develop student teachers’ practice and her/his own mentoring practice • has knowledge about various mentoring models and can apply this knowledge in staff development and school improvement • has in-depth knowledge about the role of feedback
Learning outputs; skills	<p>The candidate</p> <ul style="list-style-type: none"> • Can conduct supervised R&D and practice-related inquiries according to acknowledged research methods and ethical norms • can apply different strategies to critically explore personal and others’ mentoring practice • can define teaching dimensions to be considered during peer observation • can provide critical constructive feedback
Learning outputs; general competence	The candidate

	<ul style="list-style-type: none"> • can apply knowledge and skills in professional collaborations • can integrate mentor knowledge and skills in school improvement activities • can apply knowledge and skills to develop clarifying and strengthening the role of teacher educators • can communicate practical knowledge to students and colleagues • can analyse the roles and performances of teachers and students during the teaching-learning process recognizing the diversity of practices and pedagogical concepts
Working methods	<ul style="list-style-type: none"> • Flipped classrooms (online lectures) • School-based communities of learning (discussing lectures and experiences) • Individual readings of literature, discussed in school-based learning communities
Assessment	<ul style="list-style-type: none"> • Team practice-related inquiry • Individual portfolio

Curricular Unit 2 – Analysing and Discussing Professional Practices for Teacher and School Development

ECTS	7,5
Level	Master-level (7)
Knowledge areas	<ul style="list-style-type: none"> • Mentoring as a Professional Practice • Scientific Methods/Practice-related inquiries • School Development
Learning outputs; knowledge	<p>The candidate</p> <ul style="list-style-type: none"> • has in-depth knowledge of how R&D and practice-related inquiries develop student teachers' practice and her/his own mentoring practice • has knowledge about various mentoring models and can apply this knowledge in staff development and school improvement • has in-depth knowledge about the role of feedback
Learning outputs; skills	<p>The candidate</p> <ul style="list-style-type: none"> • Can conduct supervised R&D and practice-related inquiries according to acknowledged research methods and ethical norms • can design and implement peer observation practices • can apply different strategies to critically explore personal and others' mentoring practice • can provide critical constructive feedback
Learning outputs; general competence	<p>The candidate</p> <ul style="list-style-type: none"> • can apply knowledge and skills in professional collaborations • can integrate mentor knowledge and skills in school improvement activities • can apply knowledge and skills to develop clarifying and strengthening the role of teacher educators

	<ul style="list-style-type: none"> • can communicate practical knowledge to students and colleagues • can discuss educational practices and its implications for teacher education and school development
Working methods	<ul style="list-style-type: none"> • Flipped classrooms (online lectures) • School-based communities of learning (discussing lectures and experiences) • Individual readings of literature, discussed in school-based learning communities
Assessment	<ul style="list-style-type: none"> • Team practice-related inquiry • Individual portfolio

6.4.3 Co-creating arenas, knowledge areas, professionalization and the University School concept

We expect these modules to contribute to the development of a mutual understanding and conceptualization of the University School concept through the shared discussion and development of teaching practices based on school based classroom observations. Teachers participating in these modules are expected to become part of a community identified with the University School concept and to become mentors to other teachers working at their school. In this manner, they are placed in an in-between, or third space, where their identity goes beyond that of a school teacher to also contemplate the role of mentor and teacher educator. This transformation must be addressed before, during and after the Educational Module. Before, it starts by setting clear expectations regarding their future role as key actors in University Schools. During, they should be accompanied in this transformation with transparent and shared discussions of its meaning and goals, that should be defined through a collaborative partnership. After, these teachers must continue to feel supported in their role, and the development of a shared professional learning community that includes them, but also the inclusion of university professors and school based teacher educators becomes crucial for the sustainability of this third space. This may even include the future development of other modules, as necessary, given the development of the community.

In these modules three main knowledge areas have been considered: 1) research and development of student teachers' practice and mentoring practice; 2) mentoring models; and 3) feedback strategies. These areas are seen as complementary in order to provide participating teachers with the necessary skills to improve their own practice, mentor student-teachers practice, and contribute to school development. These will allow participating teachers to further develop their mentoring skills, contributing to their professional development and professionalization, allowing them better support the initial teacher education of student-teachers in their schools as well as the whole school development of their institutions.

6.5 Synopsis

The IO3 document is a further development of the project's IO1 and IO2. In the current document the aim has been to establish a knowledge base for the development of an educational module (the EdUSchool Study-Program), for teachers and leaders in University Schools, exemplified by the presentation of a framework for such a program. The model is supported by a theoretical rationale and illustrated by the model developed and implemented in the University School program at NTNU in Trondheim, Norway (hereafter USSiT). Lessons learned are presented and discussed.

In awareness that teaching and teacher education differ from country to country and even from institution to institution, IO3 includes suggested models from all the partner institutions, and the extent to which they have been implemented varies greatly.

However, there are some conclusions to be drawn which might serve as guidelines for international colleagues who aim to develop their version of University Schools

- Establish co-creation arenas (third spaces) between actors from universities and schools that allow for renegotiation and contextualization when implementing EdU-chool Educational Modules.
- EdUSchool Educational module is based on the integration of the knowledge areas mentoring, R&D and school development. The integration is reflected in all aspects of the module (goals, working methods and syllabus).
- Developing a contextualised educational module for teachers and leaders at University Schools. One size does not fit all.

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