

## Operating and evaluating regional networks, a project initiated by the government

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### *The IMST project*

The nation-wide project 'IMST' (Innovations Make Schools Top) aims at improving instruction in mathematics, science, IT, German language and related subjects. The focus is on students' and teachers' learning ([www.imst.ac.at](http://www.imst.ac.at)).

Since 1998, the project has been repeatedly commissioned by the Austrian Federal Ministry of Education, Science and Culture to the Institute of Instructional and School Development (IUS) at the Alpen-Adria-Universität Klagenfurt. It developed in three phases: (1) Analysis of the disappointing Austrian results at the Third International Mathematics and Science Study (TIMSS 1995); (2) Development of the IMST project (2000-2004); (3) build-up of a school support system (2004 - ongoing). Since 2004 IMST encompasses the entire educational system (K-12 and teacher education). Currently about 21.000 teachers are involved who participate in projects or cooperate in networks.

The IMST programme 'Regional and Thematic Networks' supports regional networks in all nine Austrian provinces, and three thematic networks which operate on the national level. Within the IMST thematic programmes, teachers put into practice innovative instructional projects and receive support in terms of content, organisation and finance. Furthermore, 18 Regional Educational Competence Centres (RECC) in science subjects were implemented all over Austria to act as a cooperative structure between universities and teacher education colleges. They partly fill the gap of a lack of subject didactic centres in higher education throughout Austria.

### *IMST and the strategies to implement inquiry-based science and mathematics education*

During its quite long duration, IMST strengthens all the strategic areas necessary for improving the educational system: Continuous Professional Development and support (CPD), giving teachers access to resources, community involvement, assessment/evaluation, and creating teachers networks.



With respect to CPD, courses for teachers in mathematics and science are organized. These four-semester courses called "PFL - Pedagogy and Subject specific Instruction for Teachers" are based on the hypothesis that first learning and teaching innovations are supported best when developed in close connection with teaching practice; and second when teachers are investigating their own work and networking with each other and with the academic community (action research). The teachers further develop their teaching knowledge and competences as well as their theoretical understanding.

Teachers participating in the IMST programme are engaged in different subprogrammes (currently by thematic programmes on competency, experimental learning, IT, assessment for learning). Within these thematic programmes the teachers were coached and received learning materials for their classroom projects. The participants –individual teachers, teacher groups, whole schools or

local school networks– have to report on their activities. Over the years, IMST therefore accumulated a rich data base consisting of project reports stored in the IMST-Wiki. They contain reflections on teaching and learning processes.

## Regional networks

The Regional Networks (RN) are, in addition to the Thematic Programmes, an important part of the project. "Regional" refers to each of the nine Austrian federal states. As of July 2012, such regional networks supported by IMST exist in all states. Furthermore, 18 Regional Educational Competence Centres (RECC) for science education (in biology, chemistry and physics) were established all over Austria to act as a cooperative structure between universities (responsible for the education of grammar school teachers) and teacher training colleges (responsible for the education of primary and lower track secondary school teachers and continuing education with a tradition in vocational experience). The RECC as regional centres of expertise in subject instruction work closely together with the RN with the focus on networking and exchange.

The goals of the networks are threefold:

- Raising the attractiveness and quality of lessons in mathematics, biology and ecology, chemistry, physics, information technology, geography, descriptive geometry and related subjects, as well as promoting cross-curriculum initiatives and school development in grammar, vocational and secondary modern schools, primary schools and kindergarten
- Professional development of teachers
- Involving as many schools as possible

The formation of regional networks is based on two principles:

- Use of existing personnel, institutional and material resources in the federal provinces
- The persons and organizations and school development act autonomously and take over responsibility for the development of regional networks.

IMST supports the setting up of steering committees in each regional network to coordinate the generation of content and to create cooperative structures for schools, the educational authority as well as teacher training colleges and universities (Fig. 9)

**Ungültiger Eigenverweis auf Textmarke..**

In order to facilitate a sustainable grounding of regional networks in their respective federal states, the financial support of IMST is conditioned by raising additional financial or personnel support in each of the federal states (i.e. teaching hours, funds for further education) as well as local industries (i.e. support of projects and network conferences).

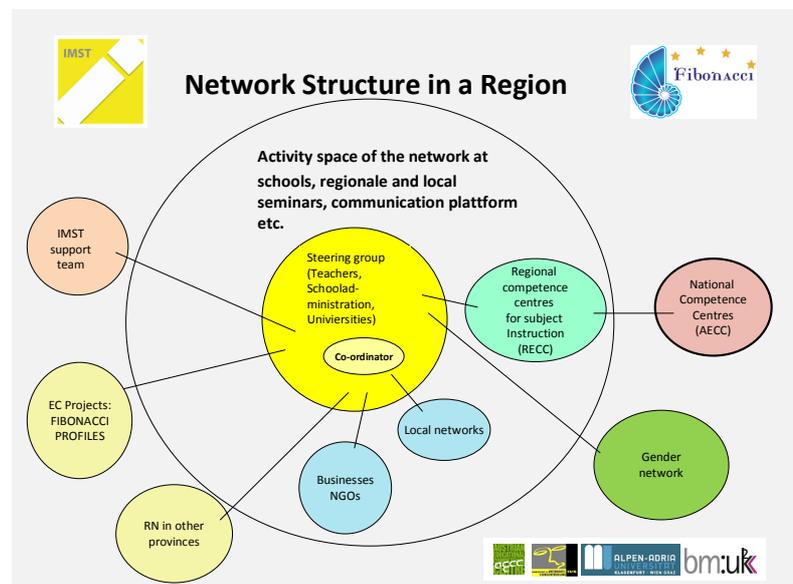


Fig.: 1: Network structure in a region

The exact task profile of a regional network is geared towards the needs of the respective schools in the region and the existing resources and it depends on the vision of the people comprising the local steering committee. It encompasses the establishment of a platform for schools and teachers, the organization for the opportunity for exchange of experiences and further education, the support of creating concentrations and their development in schools, the development of a pool of experts to advise on instructional and school matters, drafting an annual report and interim reports on the activities of the regional networks and the implementation of an evaluation.

The networks and the RECC are supported by the network-team at the IUS at the University of Klagenfurt via a platform for ongoing process management, two seminars per year for members of

the steering committee and leaders of the RECC, public relations (folder, newsletter), accompanying research and studies on the development of networks through the team of networks. Thus the local needs and developments are balanced by a national exchange of experiences and endeavours.

### *Evaluation measures*

Evaluation is a central element of IMST. IMST can be described as cooperative structure between schools, school administration, universities/teacher training colleges and businesses coordinated by the IUS at the Alpen-Adria-Universität Klagenfurt. Like every sub-programme within IMST the regional networks are assessed by self and external evaluation. The individual regional and thematic networks each submit an annual written documentation, including an evaluation in accordance with the cooperation's agreement. The RN leadership team documents the working process consulting in a log book and gathers written and verbal feedback on the network seminars. In addition series of interviews were commissioned regularly. As of now about 70 reports have been submitted from regional networks.

The results might be summarized as follows: Social contacts prove to be indispensable to the creation of structures, the exchange of experiences and mutual learning. Therefore the approach of using and further developing existing regional structures is, so far, successful. Such development, however, needs small steps. The support from state education authorities is essential for the development of regional identities in networks. The duties of the steering committee and its coordinator(s) are diverse and can only be accomplished by teamwork.

With reference to the four functions of networking according to Dalin<sup>1</sup> (1999), namely informative function, learning function, political function and psychological function, the evaluation data collected up to now give rise to some indicators and examples. Innovative projects are carried out within the regional networks and increase the attractiveness of science lessons with cross-curricular teaching as well as in collaborations between schools.

The dynamic development of RECC is remarkable; they developed out of the networks. In the next few years, the focus will be on constructing collaborative structures between networks and RECCs as well as quality development and assurance through process management, process guidance, evaluation and research.

#### Lessons learnt:

- Good practice cannot be cloned but exchange of experiences on a personal level supports learning and innovations.
- Teacher Networks offer a goal oriented exchange processes among teachers (*information function*) which support professional development of teachers (i.e. fresh ideas for classroom teaching, inter-disciplinary cooperations at schools) (*learning function*).
- Teacher Networks could create a culture of trust, raise self-esteem and risk-taking of teachers (*psychological function*) and could upgrade science at school (*political function*).
- It is necessary to maintain a balance of *Action & Reflection* (goal-directed planning and evaluation) and *Autonomy & Networking* (analysis of own situation, support by „critical“ colleagues at school, IMST-facilitator) in order to set up a sustainable support system for schools.
- Evaluation and Research needs to be oriented towards an iterative connection between an interest to gain new knowledge and a developmental interest. A culture of self-critical and collective reflection might flourish, but one should not reflection hamper the carrying forward to the project.

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<sup>1</sup> Dalin, P. (1999). Theorie und Praxis der Schulenwicklung. Neuwied: Luchterhand.

