

PROFILES Guidebook for Partners

Section C Establishing and Evaluating Teacher Ownership

Sub Part 4

Participating in Networking

PROFILES envisages the setting up of teachers' networks (and interacting with other networks) to both maximise the dissemination and to make teachers more aware of the PROFILES project and the goals it is setting out to achieve.

4.1 About Teacher Networks

Teachers' networks are support systems based on reciprocity. Those involved can exchange views and information and cooperate within the scope of mutual concerns.

The networks have an information function which becomes visible as a bridge between practice and knowledge, as well as ideas supplied through training and interchanges between teachers.

The networks are aided by a platform for ongoing process management, seminars to make other teachers aware, important to facilitate further levels of networking. As the concept of the networking is related to theories of social development, key components are recognised as:

- *Mutual intention and goals* – PROFILES networks focus and orient themselves on PROFILES framework topics and targets which have been mutually agreed by teachers and the partner (Liebermann & Wood, 2003).
- *Trust orientation* – mutual trust among teachers is seen as a prerequisite in order to encourage the exchange and sharing of knowledge and experiences. Under such conditions, networks have been shown to bolster new innovation paths (risk taking) and support conflict resolution (Mc Donald & Klein, 2003).
- *Voluntary participation* – this key aspect means attitudes and values of the teachers are of paramount importance in enabling the networking to function. Clearly sanctions and penalties are absent and interventions suggested by PROFILES partners, lead teachers and other stakeholders can be vetoed.
- *Principle of Exchange* (win-win relationship) - maximising the exchange of information, without comprising the PROFILES goals of promoting self-efficacy of teachers towards IBSE-related science teaching. The phenomena of power and competition are not excluded (a check is clearly needed on exchanges deemed unsuitable in a PROFILES environment and the concept of building towards best practice is not more related to collaboration than competition) , but rather are approached and dealt with on the same level between the partner and the teacher users (OECD, 2003).
- *Steering platform* – networks do not operate by occasional interactions and relationships, but rather in a continuous phase with an institutionalised configuration. Clearly PROFILES networks require coordination and maintenance in order to support and facilitate the exchange processes, cooperation and learning (Dobischat et al., 2006).
- *Synergy* – networks make synergy effects possible through structural organisation, offering an alternative to classic rationalising strategies which are characterised by the dismantling of structures (Schaffter, 2006).

The teachers' networks are set up at different levels of operation. With the help of 'lead' teachers and the support of head teacher, school networks are the initial focus. These focus on the school

situation and aim at building up a teaching culture that embraces IBSE, based on a high self efficacy of the teachers concerned. Research shows that a multiplier needs support. Teacher training institutions are important to support the development of structures or already established networks.

4.1.1. Practical Dimensions of networks

Following Dalin (1999), networks take over the function of information. This becomes visible in the act of direct exchange of practical knowledge for instruction and school and as a bridge between practice and science/research.

Through networking extended learn-possibilities and development of competences (process of professionalization) were fostered and justifies a function of learning.

Trust is seen as a prerequisite in terms of networking, the basis for the psychological function networks and which bolster and improve the individuals.

The forth, so called political function of networking, rise the self-assertiveness in terms of education-concerns. According to the concept: "United we achieve more" or together we are powerful.

To have a effect on the educational system , steering structures for communication and the knowledge-exchange between teachers, science trainee teachers educators, scientists and experts from all social subsystems (for example the economy) are essential.

4.1.2. Educational dimensions of networks

In the last ten years, the educational system reflected noticeable on networks. Structure changes in the administration and policy of decentralization are two reasons for. Single schools take more responsibility and develop or foster "intermediate" structures (Czerwanski, Hameyer & Rolff 2002; OECD 2003; Berkemeyer at al. 2008, 2009). Networks can be seen "governance-theoretically" (Kussau&Brüsemeister 2007) as structures in which we can break fresh ground. In the tension of administration (top-down) and grass-root movement (bottom-up), autonomy and community, instruction/guideline and freedom, voluntary nature and obligation, difference and participation, practice and science, new ways of education and teamwork of persons and institutions on a regional and local level can be created.

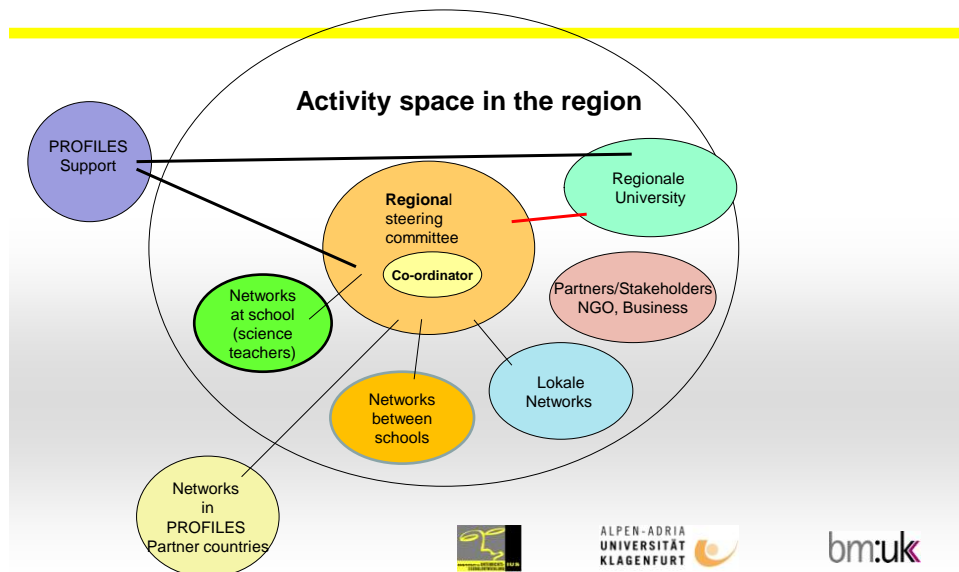
4.1.3. Educational-scientific dimensions of networking

Currently networks promise to be a promising structure to support the instructional and school development (Veugelers & O'Hair 2005; Berkemeyer at al. 2009). Nevertheless, there are only a few papers on the effect of networks. The requirement for accompanying research is going to increase, and a new field of research is going to be established, new fields of development and challenges take shape (Dedernig 2007; Hollstein & Straus 2006; Jansen 2006; McLaughlin at al. 2008).

4.2. Types of networks

The types or conceptions of network range from experts-groups at schools to school-networks at a regional and local level. In doing so, we target interventions in the class, at school, on a local level as well as regional and national levels. Networks on the level of teacher-groups, schools and local structures are closely linked to instruction and may contribute to improve the regional structures (Altrichter, Rauch & Rieß 2010).

Types of Networks



This chart gives an outline about different networks. The steering committee coordinates the activities.

4.3. Functions of networks in the Educational System (Dalin 1999):

- **information:** direct and immediate exchange of relevant information about teaching and learning
- **learning:** extended learning opportunities by mutual exchange
- **political function:** co-operation with likeminded people foster dissemination and implementation of innovations
- **psychological function:** possibilities of co-operation and trust strengthens people („risk-taking“)

4.4. Different Levels of networks (Examples):

- **Networks at school** (Experts- or Specialists-Networks)

Teachers co-operate on school level
 Science as focus on school
 Support by headteachers
 Steering group at school
 School development through science/IBSE

- **School networks**

3-5 school work together
 Exchange and joint projects
 Establishing Leading school
 Establishing partnerships (with community, science, businesses ...)

- **Local networks on district level**

Partnership within one school district

Joint projects among science teachers from different schools in the district

Local steering group

Involvement of local stakeholders (education, administration/politics, business, NGOs ...)

- **Regional Networks**

Partnerships within a whole region/operates in one political region/province (above local level)

Involvement of stakeholders within education system and beyond (NGO, businesses ...)

Intermediate structure

Annual network conferences

- **National networks**

Scope is a country

Complex steering structure with substructures

Annual network conferences

Awards, Newsletter ...

- **International networks**

Operate on international level

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- **Communication in networks**

Electronical platforms

Printed materials like Newsletter

Face-to-Face communication

4.5. Regional Networks in Austria (elaboration):

A further level of teachers' networking is the interlinking of the school networks to form a regional network. On the school level the head-teacher is of utmost importance, on the regional levels local authorities. One reason is the structural changes in the responsibilities of the central administrative structures that accompany decentralisation. In so doing, more responsibility is transferred to the school level which brings about the creation of intermediate structures (Czerwanski et al., 2002)

Such networks can be seen as intermediate structures involving, among other things, the field of autonomy and inter-connectedness of structures and processes; parameters and freedoms; as well as voluntariness and obligations. Networks try to forge new paths in the formation of learning and the cooperation between the people and institutions A good model for networking is IMST (innovations in mathematics, science and technology teaching – innovations make schools top) (Krainer, Hanfstingel & Zehetmeier, 2009; Rauch & Kreis, 2007).

Teachers' networks are not without their problems, but there is evidence (Liebermann & Wood 2003, Rauch & Scherz, 2009) that regional networks can meet informative, learning, political and psychological functions as recognised as important by Dalin (1999). Nevertheless it needs to be

recognised that networks perform a complementary function. Alone, networks are hardly in a position to carry system interventions (McDonald & Klein, 2003).

Within PROFILES, regional teachers' networks can be interconnected through partners. This is seen as a major step towards a European-wide teachers' network.

In Austria for example the regional steering groups consisting of teachers, administrators, teacher educators and researchers coordinate the main activities. Their tasks are the organisation of exchange, learning communications platform, documentations and evaluation, as well as participation on seminars and meetings (exchange with other networks).

4.5.1. Preliminary Results – Quantitativ

Dynamic development:

- regional networks in all nine Austrian provinces
- local networks on district level
- 15 regional and 5 national centres for subject instruction at universities

Extension of networks: ca. 7000 participants at network activities all over Austrian (since 2004) (ca. 15 % of all Austrian teachers)

Fonds for instructional and school development: since 2004 support of 770 projects at schools

4.5.2. Some Risks for Dissemination in Networks

As the experience in Austria showed, networking in practice is not without fault. Some risks that have been identified can be summarized as:

- gap between electronic information/networking and concrete practice
- the networks move away from the interests of teachers and from the teaching and learning of students
- common visions and goals disappear
- weak co-ordination
- lack of resources
- already active teachers participate

Literature

Altrichter, H., Rauch, F. and Rieß, G. (2010). *Netzwerkbildung in der österreichischen Schullandschaft*. In N. Berkemeyer, W. Bos & H. Kuper (eds.), *Schulreform durch Vernetzung. Interdisziplinäre Betrachtungen*. Münster: Waxmann, 193-212.

Berkemeyer, N., Bos, W., Manitius, V. and Müthing, K. (eds.) (2008). *Unterrichtsentwicklung in Netzwerken. Konzeptionen, Befunde, Perspektiven*. Münster: Waxmann.

Berkemeyer, N., Kuper, H. Manitius, V. and Müthing, K. (eds.) (2009). *Schulische Vernetzung. Eine Übersicht zu aktuellen Netzwerkprojekten*. Münster: Waxmann

Czerwanski, A., Hameyer, U. and Rolff, H.-G. (2002). Schulentwicklung im Netzwerk – Ergebnisse einer empirischen Nutzenanalyse von zwei Schulnetzwerken. In H.-G. Rolff, K.-O. Bauer, K. Klemm and H. Pfeiffer (eds), Jahrbuch der Schulentwicklung. München: Juventa, 99–130.

Dalin, P. (1999). Theorie und Praxis der Schulentwicklung. Neuwied: Luchterhand. Derdernig, K. (2007). Schulische Qualitätsentwicklung durch Netzwerke. Das internationale Netzwerk innovativer Schulsysteme (INIS) der Bertelsmann Stiftung als Beispiel. Wiesbaden: VS Verlag für Sozialwissenschaften.

Dobischat, R., Düsseldorf, C., Nuisl, E. and Stuhldreier, J. (2006). Lernende Regionen – begriffliche Grundlagen. In E. Nuisl, R. Dobischat, K. Hagen and R. Tippelt (eds), Regionale Bildungsnetze. Bielefeld. Bertelsmann, 23-33.

Hollstein, B. and Straus, F. (eds.) (2006). Qualitative Netzwerkanalyse. Konzepte, Methoden, Anwendungen. Wiesbaden: VS Verlag.

Jansen, D. (2006). Einführung in die Netzwerkanalyse. Grundlagen, Methoden, Forschungsbeispiele. Wiesbaden: VS Verlag. (3rd edition)

Krainer, K., Hanfstingl, B. and Zehetmeier, S. (eds.), Fragen zur Schule - Antworten aus Theorie und Praxis - Ergebnisse aus dem Projekt IMST. Innsbruck: StudienVerlag.

Kussau, J. and Brüsemeister, T. (2007). Governance, Schule und Politik. Zwischen Antagonismus und Kooperation. Wiesbaden. VS Verlag.

Lieberman, A. and Wood D. R. (2003). Inside the National Writing Project. Connecting Network Learning and Classroom Teaching. New York: Teacher College Press.

McDonald, J. and Klein E. (2003). Networking for Teacher Learning: Toward a Theory of Effective Design. Teacher College Record, 105(8), 1606-1621.

McLaughlin, C., Black-Hawkins, K., McIntyre D. and Townsend, A. (2008). Networking Practitioner Research. London: Routledge.

OECD (ed.) (2003). Schooling for Tomorrow. Networks of Innovation. Paris: OECD.

Rauch, F. and Kreis, I. (2007). Das Schwerpunktprogramm „Schulentwicklung“: Konzept, Arbeitsweisen und Theorien. In F. Rauch and I. Kreis (eds), Lernen durch fachbezogene Schulentwicklung. Schulen gestalten Schwerpunkte in den Naturwissenschaften, Mathematik und Informatik. Innsbruck: Studienverlag, 41-62.

Rauch, F. and Scherz, H. (2009). Regionale Netzwerke im Projekt IMST: Theoretisches Konzept und bisherige Erfahrungen am Beispiel des Netzwerks in der Steiermark. In K. Krainer, B. Hanfstingl and S. Zehetmeier (eds.), Fragen zur Schule - Antworten aus Theorie und Praxis - Ergebnisse aus dem Projekt IMST. Innsbruck: StudienVerlag, 273 – 286.

Veugelers, W. and O’Hair, M.J. (eds.) (2005). Network Learning for Educational Change. New York: Open University Press.

Schäffter, O. (2006). Auf dem Weg zum Lernen in Netzwerken – Institutionelle Voraussetzungen für lebensbegleitendes Lernen. In R. Brödel (ed), Weiterbildung als Netzwerk des Lernens. Bielefeld: Bertelsmann, 29-48.