

13/ BINE: Professional development ESD course for higher education teachers, Austria

AUTHORS

Prof. Dr. Franz Rauch, *Institute of Instructional and School Development, Alpen-Adria-University Klagenfurt, Austria, franz.rauch@aau.at, <http://ius.aau.at/franz-rauch>*

Dr. Regina Steiner, *University of Teacher Education Upper Austria, Linz, Austria, regina.steiner@ph-ooe.at*

INITIATIVE CONTACT

Prof. Dr. Franz Rauch, *franz.rauch@aau.at*

PARTNER INSTITUTIONS INVOLVED

Austrian Educational Competence Centre Biology, University of Vienna

University of Teacher Education Styria

University of Teacher Education Lower Austria

University of Teacher Education Vorarlberg

Applied University of Agricultural and Environmental Education

FORUM Environmental Education

Federal Ministry of Education and Woman Affairs (BMBWF)



1 WHAT

The University course *Innovation in Teacher Education – Education for Sustainable Development* (BINE) is a professional development course for higher education teachers in Austria. The main goal of BINE is to encourage participants to deal with subject information on sustainable development and education for sustainable development as a “community of learners” in a reflected way. To achieve this, the course aims to (a) improve pedagogical research competences (mainly action research), (b) research and reflect on educational practice in teacher education in diverse educational subjects, and to (c) implement sustainable development issues in the teacher education curriculum.

The BINE course is based upon a research project entitled *Environmental Education in Teacher Education* (ENITE) which was run in several phases in the years 1997-2004. Based upon this project the ENITE-network has been created as a platform for the mutual exchange of experience and ideas in order to support the stabilisation of existing ENITE initiatives (e.g. co-operation of the University in Vienna with schools; project oriented teaching and learning, etc.) and their expansion to additional institutions of teacher training (Rauch & Steiner, 2003). This has been followed by the development of the BINE Course which has been running since 2004. Internationally, the project and the course are the Austrian contribution to the international *Environment and School Initiatives* (ENSI) network in the realm of teacher education (www.ensi.org).

The ENITE research project, the ENITE network and the BINE course are based on the following principles:

Learning experiences are built on the previous experiences of the participating educators and influenced by them. This implies active participation by the educators in developing the contents and methodology of a project (from problem definition to quality evaluation);

Learning is designed as an interdisciplinary process and not fragmented into disciplines;

Learning includes a research component based on systematic reflection on actual teacher practice (action research);

The impact on and changes in work cultures and organisational structures are taken into account in the action and reflection processes (Posch, Rauch & Kreis 2000).

2 KEY QUESTIONS

The key questions this initiative aims to address are:

Q: How might inquiry based learning in ESD be developed and sustained within teacher education at universities?

Q: How can action research as well as other forms of research inform ESD?

Q: How can networks support the sustainable development of ESD at universities and in schools?

3 WHY

Like human rights, sustainable development may be regarded as a “regulative idea” (Immanuel Kant). Regulative ideas don’t indicate how an object is made up but serve as heuristic structures for reflection. They give direction to research and learning processes. In terms of sustainability, this implies that the contradictions, dilemmas and conflicting targets inherent in this vision need to be constantly re-negotiated in a process of discourse between participants in each and every concrete situation. This implies a great challenge but also has considerable potential to enhance innovative developments in education in general and in teacher education in particular. Against this theoretical background and according to empirical findings it is evident that ESD is barely developed in teacher education.

Furthermore, the interdisciplinary nature as well as the present and future relevance of the sustainability debate, with all its inherent dilemmas, uncertainties and confusions, may constitute fertile ground for educational innovation. It is of utmost importance to address the challenge of the vast complexity which results from sustainability and related uncertainties in order to retain a capacity for action without lapsing into simplistic dogmas. While on the one hand sustainability issues are used as a vehicle for innovation in education, they are also meant to trigger

concrete sustainable social development processes (Rauch, 2002). This implies a great challenge but also has considerable potential to enhance education for sustainable development.

On a structural dimension the course was developed as a joint initiative of the institutions involved in the ENITE network (see above). The curriculum of the course should offer a context for further development and research and combine it with a formal certificate, as well as with a dissemination perspective. Members of the ENITE project form the leading team of the course.

4 HOW

The BINE course offers three one-week seminars plus regional mentoring meetings. Participants write case research based studies in order to get a certificate. In the course, equal emphasis is put on theoretical-methodical foundation and learning from one's own practical experiences/projects. Projects on sustainable development and research activities are related to one another. So far three rounds of the BINE course have been completed (2008, 2011, 2014).

In the *seminars (SE)* - part of the BINE course - the contents are conveyed in the form of presentations and input by the seminar leaders/guest speakers (designated experts from educational, political, social and economic sciences) and then dealt with and discussed on a deeper level in group work, exercises and workshops. *Working groups (WGs)* serve to facilitate the exchange of experiences, the work on literature and the support of research work. WGs are held in regional groups and led by a member of the BINE leadership team. In the *research project* the participants develop and investigate a project based on their own practice according to the paradigm of practice research / action research. The work is supervised by a member of the leadership team (see the diagram in **Figure 4.12** for an overview of the course).

The BINE course comprises the following *obligatory courses* (amounting to a total of 36 ECTS-points):

- *Module 1:* Concepts of Sustainable Development, topics of Education for Sustain-

able Development, research methods, conception of own project and research plan (1. term; SE 6 ECTS; WGs 1.5 ECTS)

- *Module 2:* Didactic Strategies in Education for Sustainable Development; research methods; reflection and analysis of the projects conducted so far and research (2.-3. term; SE 6 ECTS; WGs 4.5 ECTS)
- *Module 3:* Research methods; visualisation and presentation techniques; cooperative further education - mini workshops, presentation of the results of the course of study (3.-4. term; SE 6 ECTS; WGs 1.5 ECTS; Thesis 10,5 ECTS)

In a process of continuous professional development the university educators research their own initiatives at their institutions with the goal of in-depth analysis based on evidence and the further development of the ESD initiatives. This development and learning process is supported by the leaders of the course and by exchange with fellow course participants who serve as critical evaluators (as well as friends).

5 WHO

The participants are teacher-educators from University Colleges of Teacher Education and universities that work on sustainable development issues and their educational challenges.

The BINE course is run by the Institute of Instructional and School Development at the Alpen-Adria University in Klagenfurt together with the University of Teacher Education in Upper-Austria Linz. Some more Teacher Education Universities (in Styria, Carinthia, Vorarlberg, Lower-Austria, and the HAUP) and the University of Vienna are partners. The course is led by a team of experts (at the moment Franz Radits, Franz Rauch, Katharina Soukup-Altrichter, Regina Steiner). In terms of finances, the participants pay a fee to attend. The co-operation partners offer mainly teaching hours for the leading team and invited guest speakers. The first two courses were co-financed by the Austrian Federal Ministry of Education and Woman Affairs. The third course received substantial subsidies from the University of Teacher Education University of Teacher Education of Upper Austria.

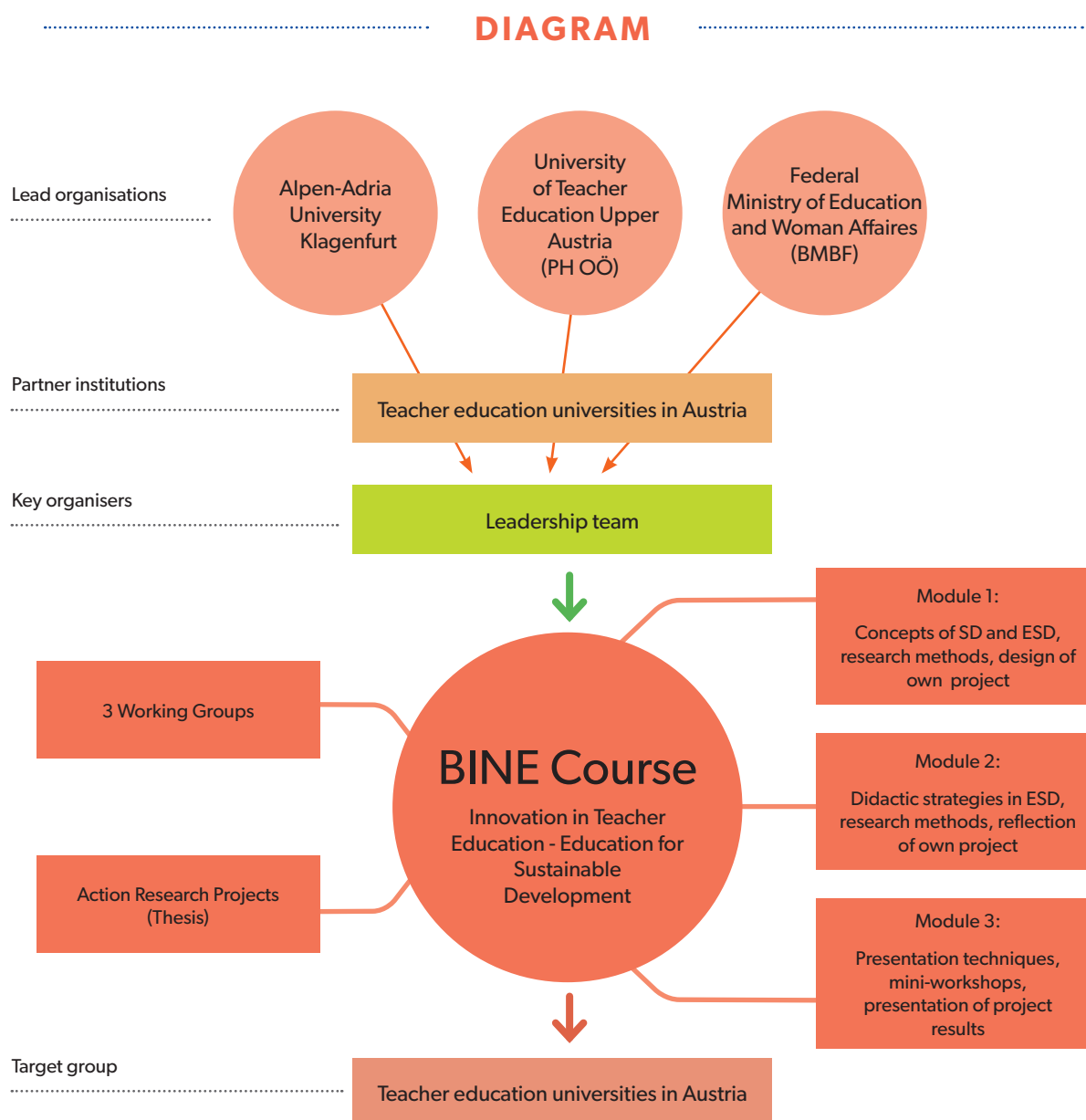


Figure 4.12 – Overview of the structure of the Innovation in Teacher Education - Education for Sustainable Development (BINE) course, Austria

6 CONCLUSIONS

The course is evaluated by a formative and summative self-evaluation with internal (questionnaires, feedback by participants) and external (questionnaires interviews with participants at the beginning and the end of the course) components.

One of the main goals of the course is that the participants gain knowledge in ESD and Action Research. **Figure 4.13** and **Figure 4.14** show the increase in both categories.

Some interview quotes illustrate participants' reflections:

“The course was productive because it was exciting for me to have the opportunity to share issues of education and sustainability with colleagues from different areas.”

„What I have learned is how to plan a research project ... which steps are necessary and where to get support ... most crucial and important for a good product is the starting point. The course nurtured my interest and the joy of doing research.“

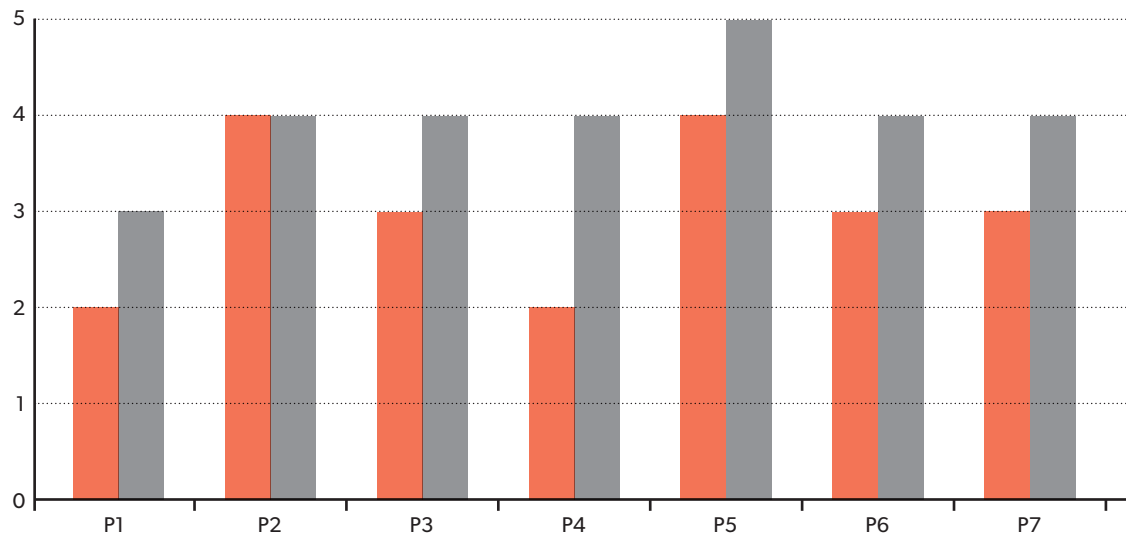


Figure 4.13 – Self-reported knowledge on Action Research based upon external questionnaire (red: before the course, grey: after the course; (min=1, max=5; P1-P7 = participant 1-7)

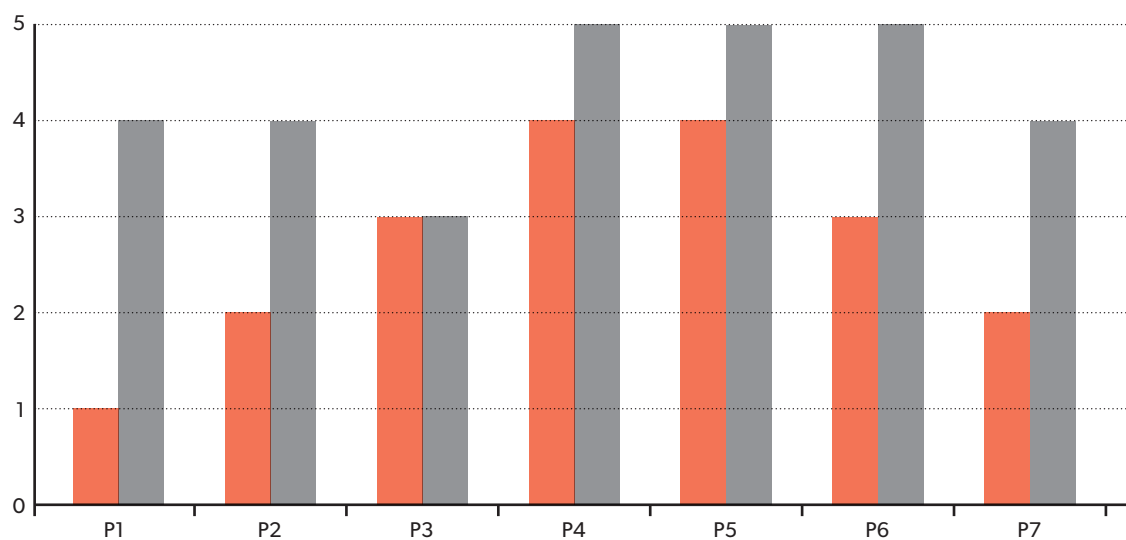


Figure 4.14 – Self-reported knowledge on ESD based upon external questionnaire (red: before the course, grey: after the course; min=1, max=5; P1-P7 = participant 1-7)

The overall results of the evaluation have shown that:

- The BINE course offers an adequate instructional and learning strategy for the participants to construct the meaning of the complex issues of sustainable development and ESD by researching, reflecting and exchanging in the learning group focused on concrete examples.
- The course has proven to enable a learning community.
- It is a challenge not to simplify ESD and lose its potential to identify the inter-connections between the ecological, social, economic and cultural-political spheres more clearly and adequately.
- The action research process provides a basis for learning in order to further develop the participants' concepts of ESD as well as research and implementation competencies.

References

- Posch, P., Rauch, F. & Kreis, I. (Hrsg.). (2000). Bildung für Nachhaltigkeit. Studien zur Vernetzung von Lehrerbildung, Schule und Umwelt. Innsbruck, Wien, München, Bozen: StudienVerlag.
- Rauch, F. (2002). The Potential of Education for Sustainable Development for Reform in Schools. *Environmental Education Research*, 8 (1), 43-51.
- Rauch, F., & Steiner, R. (2003). The Emergence of a Network in Teacher Education. In R. Kyburz-Graber, & P. Posch (Eds.), *Challenges in Teacher Education - Interdisciplinarity and Environmental Education* (140-145). Innsbruck, Wien, München, Bozen: StudienVerlag.
- Selected Publications connected with the BINE Course
- Rauch, F. & Pfaffenwimmer, G. (2014). Education for Sustainable Development in Austria. Networking for Education. In R. Mathar & R. Jucker (Eds.) *In Schooling for Sustainable Development: A Focus on Europe* (157-176). Springer: Dordrecht.
- Rauch, F. & Steiner, R. (2013). Welche Kompetenzen braucht Bildung für Nachhaltige Entwicklung?. In J. Menthe, D. Höttecke, I. Eilks & C. Hößle (Eds.), *Handeln in Zeiten des Klimawandels – Bewerten lernen als Bildungsaufgabe* (65-78). Münster: Waxmann
- Rauch, F. & Steiner, R. (2013). Competences for Education for Sustainable Development in Teacher Education. *CEPS-Journal (Centre for Educational Policy Studies Journal)*, 3, (1), 9-24.
- Steiner, R., Rauch, F. & Felbinger, A. (2010) (Eds.). Professionalisierung und Forschung in der LehrerInnenbildung. Einblicke in den Universitätslehrgang BINE. Wien: BMUKK.
- Rauch, F., Steiner, R. & Radits, F. (2010). Der Universitätslehrgang Bildung für Nachhaltige Entwicklung – Innovationen in der Lehrer/innenbildung (BINE): Ein Instrument zum Aufbau von Forschungskompetenz an Pädagogischen Hochschulen. *Erziehung und Unterricht*, 160(1-2), 92-96.
- Rauch, F., Streissler, A. & Steiner, R. (2008). Kompetenzen für Bildung für Nachhaltige Entwicklung (KOM-BiNE). Konzepte und Anregungen für die Praxis. Wien: BMUKK.
- Rauch, F., Steiner, R., & Streissler, A. (2008). Kompetenzen für Bildung für nachhaltige Entwicklung von Lehrpersonen: Entwurf für ein Rahmenkonzept. In B. Bormann, & G. de Haan (Eds.), *Kompetenzen der Bildung für nachhaltige Entwicklung. Operationalisierung, Messung, Rahmenbedingungen, Befunde* (141-158). Wiesbaden: VS Verlag.
- Rauch, F., Steiner, R., & Radits, F. (2007). University Course „Education for Sustainable Development - Innovations in Teacher Education“ (BINE). www.csct-project.org/component?option=com_docman/task,cat_view/gid,6/dir,DESC/order,name/Itemid,42/limit,5/limitstart,10/ (20.12.2007)
- Rauch, F., & Steiner, R. (2005). University Course „Education for Sustainable Development - Innovations in Teacher Education“ (BINE): Reasons, Concept and First Experiences. In *Proceedings of the Conference “Committing Universities to Sustainable Development (359-368)*, April 20-23, 2005, Graz.

Further information:

More information about the BINE course at the FORUM Environmental Education website (in German):

<http://www.umweltbildung.at/initiativen/archiv/bine-lehrgang.html>



More information about the BINE course at the Alpen-Adria-University Klagenfurt website (in German):

http://ius.uni-klu.ac.at/lehre_und_beratung/lehrgaenge/bine/



Case study and additional materials at the UE4SD Online Platform of Resources (access via the UE4SD project website):

<http://www.ue4sd.eu/>

