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# Researching While Teaching:

# Promoting Reflective Professionality in Higher Education

Michael Schratz
Department of Education
University of Innsbruck
Innrain 52
A-6020 Innsbruck
Austria, Europe

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# Researching While Teaching:
## Promoting Reflective Professionality in Higher Education

Michael Schratz, University of Innsbruck (Austria)

## Abstract

In an interdisciplinary approach to improve faculty members' teaching competences in higher education at the Unviersity of Innsbruck (Austria), an action research type of program proved most suitable to promote reflective professionality across the disciplinary boundaries. After an introductory session individual projects were initiated, in which the participants undertook different approaches to action research by reflecting on their own teaching situatio. As an ongoing evaluative process between individual inquiry-based phases of lecturing and reflective plenary sessions the program tried to offer deeper insights into the participants' own 'theories' of what they intend to accomplish in the classroom and how they want to achieve these goals. Moreover, through its cooperative design across the disciplinary boundaries, the action research approach played an important part in organizational development. Because of their complexity, institutional changes depend on individual as well as collective actions on various levels of an educational institution. Experience in this program has shown that promoting reflective professionality in an institution of higher learning helps in dealing with the important relationship between the subjective and objective factor in the dynamics of institutional development. In this sense, educating the reflective practitioner within university teaching, will help in establishing a culture of self-evaluation and personnel development across disciplines.

## Searching for a perspective

Although researchers seem to represent different 'tribes' in the disciplinary 'territories' of a university setting (cf. Becher, 1989), which occupy different spaces on the scale of social reproduction (cf. Bourdieu, 1985; Huber, 1990), they usually show little difference in the way they teach. Looking into lecture rooms in different countries one often arrives at observations similar to those which Sykes mentions for the situation in the United States. For him professors

(1) Merely regurgitate the textbook.
(2) Rely on notes prepared when they were younger, more ambitious, and without tenure.
(3) Dwell on their own specialties without bothering to translate the material from the arcane jargon of their specialty.
(4) Turn their classes into rap sessions, a tactic that has the advantage of being both entertaining and educationally progressive.
(5) Fail to prepare at all and treat their classes to an off-the-top-of-the-head ramble, leaping from topic to topic in what they think are dazzling intellectual trapeze acts but which usually are confusing, frustrating muddles for the students. (1988, 61)

It would be one-sided only to blame the individual lecturers themselves for the little value they place on their activities in the classroom. Despite many arguments and concrete suggestions for changing this imbalance in professional self-understanding, career advancement for faculty is still predominantly based on the number of publications in their discipline or the prestige of the international conferences they attend. At the different conference locations they hardly ever discuss their concerns for the teaching at an institution of higher learning. Often one even gets the impression teaching stands in the way of their ongoing research commitments, thereby creating a kind of Apartheid system between the two realms. When asked about their teaching experience, lecturers

often come up with similar questions independent! disciplinary background. Here are some examples:

*"How can I motivate my students to actually learn what I teach them in my lectures?"*

*"How can I get my students to work more independently?"*

*"How can I include the students' ideas in the planning of my lectures?"*

*"In the medical practicum I often experience insecurity, fear, defence, chaos and aggression among students. What can I do to improve that situation?"*

*"How can I develop myself towards more cooperation and creativity in my teaching?"*

Questions like these were often asked by Austrian university teachers across the disciplines when we tried to find out about their problems in higher education across the disciplines. One might conclude that teaching would form an ideal meeting point for common departures in cross-disciplinary discussions. However, we learnt from their previous experiences participating in staff development courses that they often neither found satisfying answers to their questions concerning teaching at university level, nor did they gain a lot from their colleagues' experiences in lecture halls and seminar rooms. This seemed to be mainly due to the conventional conception of teaching which can be characterised as a knowledge transfer system (cf. Freire, 1972) whereby, in Becher's terms, members of the 'educational tribe' pass on the accumulated knowledge from their territory to members of non-educational tribes, as if they did not have professional knowledge in this field with hundreds of hours spent in teaching students at university level. This transfer system of didactic knowledge does not even seem to work for educational experts themselves, as H. v. Hentig reports from his experiences as a university teacher:

> None of the learning objectives, hierarchical structures, goal dimensions, the operationalisation, the interesting, differentiated and plausible taxonomies, the models of input/output, stimulus/response and sender/receiver, game theory, decision making processes and cybernetic models, systems of action and symbolic interaction, the differentiation between teacher proof, situative and open curricula were really necessary for practical work in teaching and its planning. (Hentig, 1985, 134 [translation mine])

We also learnt from university teachers that conventional concepts in staff development had rarely helped them in getting an answer which would *practically* deal with their problems. Staff development did not affect the university as a powerful institution of higher learning. As a consequence, activities aimed at improving teaching usually only had short-term effects and rarely involved lecturers in a lengthier process of working on their teaching in higher education, let alone made them 'change agents' for institutional development:

> The problem with such simplistic approaches is that, while they aim to produce material improvements that appear to be possible in perplexing, difficult and uncertain times, what they fail to disclose is how small improvements leave untouched the political, economic and social structures which gave rise to the difficulties in the first place. What these cosmetic changes fail to attend to are the deep-seated sources of power and exploitation that are present in the structural arrangements that lie at the root of the problem. (Smyth, 1989, 484)

Similar to the situation in academic institutions in many countries, advancement and professionalisation in higher education in Austria has always been neglected compared to the

emphasis put on career development in laboratory work and scientific research. On the institutional level, an infrastructure for research and supervision in higher education teaching hardly exists and is mainly maintained by committed individuals and a private association publishing the only Austrian journal on higher education, and organising workshops for interested academic staff. Moreover, research on interdisciplinary work in academic institutions shows how difficult it is for members of different faculties to communicate and interact professionaly (cf. Leithaeuser, 1988).

Against this background, in 1986, a senate committee was established at Innsbruck University to deal with this deplorable situation and to develop a program aimed at improving the teaching competence of its lecturers. As a first step, this committee carried out an informal study throughout the university to discover more about the needs and interests of people wanting further incentives for the improvement in teaching. This study was based on previous findings showing that university staff were generally motivated to improve their teaching competences even though their main interest lay in their disciplinary fields of scientific research.

A few words about the institutional context of Higher Education at Innsbruck University: 20,000 students, 1,200 full-time faculty, several hundred lecturers from other universities or extramural professional backgrounds, seven faculties (Architecture, Law, Humanities, Medicine, Natural Sciences, Social Sciences and Business and Commercial Studies, Theology) each consisting of several independent departments. The size of classes varies according to the popularity of the course. Introductory classes with five-hundred and more students might have to move out of the premises because there are simply not large enough lecture halls available, but they are rather the exception. Whereas general lectures usually attract one to two hundred students, seminars are limited to about thirty students.

## Creating a culture for critical reflection

In order to meet the educational demands of the university teachers from the diverse disciplinary backgrounds, the senate committee representing the different faculties of the university started to design a suitable framework for a pilot program to satisfy the faculties' needs and expectations. The approach developed tried to meet the following requirements, which came out of the initial analysis. It should

(i) take its starting point in the needs and interests of everybody involved, that is students and teachers irrespective of their disciplinary background;

(ii) give teaching the same status as is usually given a research interest;

(iii) aim at a longer involvement leaving enough space for reflective activities;

(iv) meet the participants at the very point at which they presently stand in their teaching;
(v) include the students' reactions in the formative evaluation procedures;

(vi) make use of the participants' on-going teaching commitments and use them as a base for further reflections;

(vii) follow a cooperative design which is not subordinate to the usual practice of disciplinary thinking within a monadic, isolated approach;

(viii) strive for continuing self-evaluation practices which enable the individual to look at his or her teaching as an on-going research activity.

An approach taking all these aspects into consideration required an ambitious design and large-scale supervision. Therefore, the proposed program was modelled along Schön's idea of *reflection-in-action* (cf. Schön 1983 and 1987) and the concept of *action research* in order to turn an initiating consultation into an on-going process of improving professional practice under critical reflection. Reflection-in-action and action research are "simply a form of self-reflective enquiry undertaken by participants in social situations in order to improve the rationality and justice of their own practices, their understanding of these practices, and the situations in which the practices are carried out." (Carr and Kemmis, 1986, 162). Action-research concepts have so far had many applications in a great variety of fields such as management and personnel training (Whyte, 1964), administration and organization development (McGill and Horton, 1973), and particularly in the context of schooling (Altrichter and Posch, 1990; Gregory, 1988; Hustler, Cassidy and Cuff, 1986; McKernan, 1988; Oldroyd and Tiller, 1987; Elliott, 1991) and teacher training (Elliott, in press; Goswami and Stillman, 1986). Although "[t]alk of promoting teacher based action research in schools as a process of educating teachers to be reflective practitioners is sweeping through faculties of education in universities across the world" (Elliott, 1989, 1), this concept has only recently been applied to the improvement of practices of higher education.

Action research here is not proposed as a mere 'method', it is meant to be understood as a way of reflecting on teaching and thereby creating an enquiry culture in education. Using this approach should help in bridging the gap between the different disciplinary cultures through the professionalisation of the teaching practice. McTaggart (1991) sketches out several principles for participatory action research, which can help in understanding the broader context of critical enquiry in education:

- *Identification of the individual and collective project:* Individuals not only try to improve their own work but also help others improve their work so that the possibility for a more broadly informed common project is created.

- *Changing and studying discourse, practice, and social organisation - The distribution of power:* Language, which carries the communicative potential, and the patterns of interaction, formed by the activities and practices of the group, are related to the social context in which they occur. Therefore professional identity is formed through the institutional culture and the power relationship among its members.

- *Changing the culture of working groups, institutions, and society:* The improvement of the situation of individuals in an organisational structure works towards change on a more global level within the institution and in society at large.

- *Action and reflection:* Action research develops through the self-reflective spiral of cycles of planning, acting, observing, reflecting and re-planning and so on. (For a more detailled description see Kemmis & McTaggart, 1990).

- *Unifying the intellectual and practical project:* Participatory action research involves a systematic learning process which uses intelligence to inform action, with a view towards an improvement of practical projects the participants are involved in.

- *Knowledge production*: The work in the action research group results in the shared understanding of its members. The knowledge development through reflective practice and mutual discussion is directed towards the improvement of the social situation they are in.

- *Engaging the politics of research action*: Participatory action research is a political process in so far as individual changes will also affect others. By critically analysing the work situation participants act politically towards overcoming accepted practices of the institution.

- *Methodological resources*: Various research methods can be utilised for the work through the self-reflective cycles of planning, acting, observing and reflecting. They reach from simple forms of data collection to more elaborate, demanding methods of investigation.

- *Creating the theory of the work*: Action research asks for a critical reflection and justification of the educational work of its participants (cf. Schratz, in press).

In order to further explore this action research idea in higher education a pilot program was proposed in the winter term 1986/87 at Innsbruck University, interested faculty and students being invited by the Vice Chancellor to take part in a preparatory meeting. This served as a kind of introductory workshop to the higher education project "Researching While Teaching" (RWT) [1]. It was difficult, however, to make this title transparent and present the philosophy behind it, as described above. Therefore, included in the written introduction to the first meeting was a statement of philosophy and purpose, which is summarised by the following questions and answers:

*What* is RWT?
It offers an opportunity to gain new insights into one's own practical theories that monitor one's teaching and learning. In this sense it can be seen as a research based in-service training which directly improves and modifies one's teaching practice.

*How* does RWT work?
In joint meetings interested university teachers are confronted with practical methods of collecting and analyzing data on teaching in higher education and are encouraged to apply these methods to their own teaching practice.

*What* is RWT *for*?
It provides the university lecturer with a deeper understanding of what he or she intends to accomplish in the lecture room.

*Who* is RWT *for*?
For everybody who is interested in adopting the role of a researcher into one's own teaching with the aim of improving it.

About fifty faculty members and graduate students across the disciplines represented at the university attended the introductory meeting to learn more about the action research project RWT. There they were first asked to express problems, difficulties and worries in their own university teaching, in order to find a basis for a common objective for research into the processes underlying that teaching. We wanted individuals to work on their own projects, but also to explore how they might help each other. That is, this phase was aimed at identifying the individual and collective project, since

participatory action research is concerned simultaneously with changing both individuals *and* the culture of the groups, institutions, and societies to which they belong. But it is important to emphasize that these changes are not impositions: individuals and groups agree to work

together to change themselves, individually and colletively. Their interests are joined by an agreed thematic concern. (McTaggart, 1991, 172)

On arrival, all participants received a sheet of paper containing an illustration of a full-page-sized magnifying glass. They were asked to express their problems, fears or expectations concerning their teaching by making use of the lens of the magnifying glass. It was left to them to decide which means of expression they wanted to use. This introductory task brought to light the different ways teachers from different disciplinary backgrounds tried to cope with identifying teaching concerns. For faculty from the so-called 'hard' sciences it was generally rather difficult to handle such an open task. Some of the participants treated the sheet in a structured way as if they were writing on imaginary lines, as can be seen from the following examples.

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Insert figure 1 about here

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For some this task seemed to become an exercise in deconstructing the convention of academic work in their respective 'tribal boundaries'. One participant, for example, who had serious problems with this task, commented:

> I feel uneasy here. Perhaps I expected something different, or perhaps I'm just not mentally prepared for this exerci ....

Another contradiction with daily routines occurred for participants who experienced a seating arrangement not familiar to them in the insitutional context of the university. To enhance participatory interaction the chairs had been set up in circular form so that everybody had eye contact with everybody else. Two university teachers had problems with the fact that there were no tables or desks available and found it very disturbing when other participants put their writing pads and pens on the floor under their seats. Unfortunately, they did not return to the following meetings.

In contrast, faculty who had been used to more associative ways of representing ideas (cf. Schratz, 1992a) used additional means by drawing pictures and similar, as can be seen from the following examples.

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### Establishing cross-cultural communities

The introductory exercise with the magnifying glass formed a focal point which would later be obser ed and analysed in the action research project. Moreover, the symbol of the magnifying glass was used as a logo for all correspondence as well as the informal papers and publications throughout the project. This reminded the participants of this initial phase and made them aware of the ongoing process of critical reflection on action. The sheets with the completed magnifying glasses were hung

up on the walls and studied by everybody, leading to lively discussions among the participants. The 'public' display of everybody's expression of their professional interests in teaching and learning not only helped to reassure people that nobody was alone with his or her thoughts, but also helped in dealing more openly with problems and worries they had in particular. The texts on the wall also stimulated lively discussions on teaching practices in general. These discussions were used by the members of the faculty development group (formed out of the original senate committee) to shift the university teachers' attention to a more systematic analysis of what was actually going on in their classrooms in the context of a wider institutional setting.

After the initial presentation and discussion phase it was suggested that the participants in the action research project undertake independent, small research tasks such as observing certain aspects of the teaching process, looking at the students' behaviour, or getting instant feedback in the classroom. The members of the senate committee, who had previous experience as consultants, provided them with a brochure containing some practical instruments for the analysis and documentation of their teaching processes. It was important for the faculty to use the instruments and techniques collected in the brochure arranged thematically - according to the following considerations:

- the participants' motivation gained from the first session should be channelled;

- as little extra work as possible in the preparation of their teaching should be occasioned;

- immediate results from the first application of new techniques in the classroom should be evident;

- confidence in the individual faculty member as a "researcher" of the affected individual's teaching should be instilled;

- feedback material for the following plenary session should be provided to the "teacher researcher";

- a critical perspective should be achieved through the chosen methodology.

During several plenary sessions, in the following weeks, the participants in the pilot program presented the findings from the on-going research activities in their lectures or seminars, but also engaged in critical reflection on broader issues emerging from the constraints and possibilities of the institutional background. The findings were then discussed in the plenum or small groups according to the thematic areas and problems arising. These meetings served two main purposes. On the one hand, they ensured that the participants did not completely have to fall back on their own resources in dealing with problems or questions which might be expected to arise during their first attempts. On the other hand, the exchange of experiences among the participating faculty members encouraged everybody to try out different and even more challenging 'research' approaches in their classes through the support of the self-critical communities established through action research. The underlying process

> aims to build communities of people committed to enlightening themselves about the relationship between circumstance, action, and consequence in their own situation and emancipating themselves from the institutional and personal constraints which limit their power to live their own legitimate educational and social values. It involves a systematic

learning process in which people act deliberately, though remaining open to surprises and responsive to opportunities. But participatory research is not just learning; it has knowledge production and action aspects to it, as well as constituting new ways of relating to each other to make the work of reform possible. It is a process of using critical intelligence to inform aciton, and developing it so that social action becomes *praxis* through which people may consistently live their social values. (McTaggart, 1991, 176)

In the first meetings most participants brought back questionnaire results to be discussed, which indicated that different forms of standardised forms of inquiry were the most popular, and were often the only methods of getting feed-back from students they had previously used. These practices, which often are purely of instrumental value, had to be dealt with in a serious way. The following discussions soon showed, however, the weaknesses of such quantitative research instruments and therefore proved to be a valuable source for sensitising the participating faculty to the desirability of more qualitative forms of classroom research. This shift could be characterised as one from traditional positivist approaches to the acceptance and use of methods and techniques of critical inquiry. It was not that measurement was not helpful, participants simply found they needed to explore students' and their own interpretations of what was happening and how.

It seems appropriate to discuss the findings at this point, since they suggest at least a twofold socialization experience, which has to be taken into account when engaging faculty in action research. First, the forms of evaluation procedures which most university teachers were confronted with in their own careers, both as learners at various levels of schooling and as teachers in different institutional settings, can be described as summative evaluation. Therefore, their interest was mainly in the outcome rather than the process (i.e. what is going on during teaching as interaction). Second, the research methods used almost exclusively in most of the teachers' own academic disciplines can be identified with a quantitative paradigm, which emphasizes 'objectivity' gained through general statistical trends in data rather than the analysis of the multiple subjective realities of social encounters.

In the first few plenary sessions, it was necessary to support the participants in their move from their socialized forms of summative thinking towards more formative views of critical inquiry in their own classes. That means, they were asked to concentrate more on what happens during the course rather than what the students produce in a final examination[2]. Smyth argues that teachers have to 'critically' confront their work in the classroom, that is, in the act of teaching itself.

Seeking to locate or situate teaching in a broader cultural, social and political context amounts to engaging in critical reflection about the assumptions that underlie methods and classroom practices. Regarded this way, teaching becomes less of an isolated set of technical procedures and more of a historical expression of shaped values about what is considered to be important about the nature of the educative act. (Smyth, 1989, 490-491)

In this sense, the chosen action-research type of approach is at the same time a political process which is geared towards change in professional practices and an attempt to improve the teaching at the same time that it is being analysed.

It was helpful at the beginning, therefore, not to answer such questions (as the ones referred to above) that teachers brought into the plenary meetings right away. Becoming more conscious of the additional research initiatives applied, the participants rather tried to question more specifically what

actually happened in their teaching. This led to an on-going reflection process along the following research questions:

What happened? Why did it happen? What was my role? What beliefs did my actions reflect? Did my actions reflect beliefs and assumptions about which I was not aware? Did the consequences of my actions raise doubts or reinforce my beliefs? How should I want to act in the future on the basis of what happened? (Posner, 1989, 26)

After the first phase of working together as a whole group in plenary arrangements, different working groups of critical communities were formed to enable the participants to follow a certain area of interest using action research methods more extensively. The groups were arranged by areas of interests (e.g. evaluation and testing, small group instruction, use of audio-visual media), and they then set themselves short- and medium-term research targets. In order to avoid overextending themselves, the groups met with members of the advisory committee, who accompanied and supervised them if necessary (cf. Elton & Pope, 1989), although most of the practical 'research' into their own teaching was done by the individual group members. It is important to stress that everybody participating took responsibility for his or her classroom interventions. As action researchers they tried to

seek understanding of people's subjective experience of their institutional situation and at the same time try to give working accounts of the contexts in which meanings are constituted. They also use the views of others to engage their own experience and to discipline their own subjective interpretations. (McTaggart, 1991, 177)

## Engaging in transdisciplinary inquiry

It is not possible to describe all the phases the individual working groups went through during the action research project. It was in particular the different dynamics caused by the interdisciplinary working groups that determined its progress. As I have given a more detailled account on the actual workings of the project elsewhere (s. Schratz, 1990 and 1992b; for a full documentation of the project refer to Klug & Schratz, 1988), in the following part I want to present some concrete examples of how the experience of intercultural communication across the disciplines affected the participants' perceptions of teaching and learning in the construction of new forms of understanding themselves, their work and its institutional setting.

One working group investigated into the problem of assessing students' progress in higher education. It took its starting point in the group members' general uneasiness with the common practice of testing students' achievements at the end of a course. In order to get their personal views on this matter, the lecturers interviewed some of their students about their experiences in assessment procedures both at secondary school and at university. They also asked about their 'coping strategies' for the forthcoming examinations. The following extract is part of a longer interview with a Pharmacy student.

Student: "I have always thought, well, earlier at school, where one had told us, well at university, there's going to be another situation not so school-like, where you learn everything by heart; and now it appears to me that it is exactly that. I had not at all expected it to be that way. I have rather thought that, above all, there would be more ..., but I get the impression that again everything has to be learnt by heart, page after

page, and there is not very much asked of your understanding or your own creativity. You will always have something put in front of you which you have to learn line by line, and that knowledge will be examined ... and if you can't repeat it, you're out."

Interviewer: "And what is so school-like for you at university?"

Student: "It's exactly that you have to learn what is put in front of you, what is in the text collection, and if you know what's in there you'll succeed. There's no doubt it's important to know those things, but one should learn on the basis of understanding. A degree course needs a decent build-up, and in one's first semester one shouldn't learn things that one only needs in the fifth semester and not until then."

Interviewer: "And what would you like instead?"

Student: "That it's more uptdated, more topical, do away with stuff that is not topical any more ... In our field we have to go in for a great amount of traditional knowledge, that is we have to study what they learnt about fifty years ago and ... we don't need that any more in our particular case." [3]

The results of these interviews were analysed and discussed in the working group, with particular view to the backwash effect of examinations on the students' learning behaviour. In the negotiating process among the group members from the different disciplines they arrived at the conclusion that an instruction geared towards the application of knowledge would be more influential on the learning process than the mere regurgitation of facts. In order to make positive use of this effect in the sense of the hidden curriculum, the participants in the group discussed new forms of teaching and testing knowlege for understanding. The following comment was made by a lecturer in in the Sciences who tried out an alternative approach in her lecture.

For me it is the question how many possibilities there are at all in an introductory course to avoid passive, dependent and consumer-oriented behaviour on the part of the students and to achieve 'higher' cognitive processes or continuing participation. As a first step it will be necessary to split up the whole group into smaller groups und to change over from a lecture hall to a seminar room, which through its flexible seating arrangement offers a better platform for communication and mutual understanding as well as for other social forms like group work.

Out of the full number of about 160 students I formed three groups which met for one and a half hours each week. Since I didn't interfere with the grouping itself, the numbers of students varied (group one consisted of about 70 participants, group two of 50-70 students, group three of 30-40 students). Every week they had to prepare a text from the reading list and apply their knowledge to a particular case study.

Whereas the case studies of the individual meetings were mainly restricted to the contents area they had to prepare for that particular day, the last two meetings were used to analyse a case study drawing on all the information they had acquired in the course of the course. This meant they had to reassemble their previous knowlege for a complex situation to be solved (synthesis). At the same time they had to evaluate theoretical models with a view to their practicability in the concrete case study. In their final assignments they had to show by means of an example how they could apply the theoretical knowledge in a practical sitation (case study). (Novotny 1988, 157, 158, 160)

In the same working group a senior lecturer in the Law School chose another way of self-assessment in her introductory course in the Law Studies.

I take my starting point in the fact that laws are made by people to enable everybody to take part in and feel responsible for justice and that laws are there to help people in orienting themselves. Therefore personal experience with law inforcement should be used to deal with law matters in a productive manner. This is why I try to enhance students to deal with legal affairs autonomously.

For assessing their success (and at the same time using this as a kind of self-assessment procedure) I suggest to the students - instead of doing a traditional exam - to evaluate their acquired knowledge by setting up a calendar [Kalendarium]: To do so for the period of a week

they are expected to individually or in groups collect legally relevant data from various sources (newspapers, radio, television etc.). They work on this information and bring it in for their course meetings and use it as a starting point for discussing legal affairs, whereby knowledge becomes more than a mere accumulation of pure facts. Thus the materials brought in on 'Sunday duties for doctors' for example aroused discussions about [arbeitsrechtliche] issues in work law; notes on the different kinds of punishment (law-court, administration) or political rights abroad led to comparisons of different legal practices and to the historical perspectives of how laws originally came into being and how they changed in the course of the time. On th basis of everybody's contribution in written and oral form it was easy to acknowledge that all students had succeeded in finishing the course. As problematic, however, I encounter the scale indicating different grades for autonomous learning encounters.

This is envisaged by a student in the following way:

I learnt a lot doing this course. I liked the 'calendar' as a way of assessing one's learning because one has to confront oneself with the contents instead of learning things by heart and things are discussed among the group. (Hofmüller, 1988, 152-153)

Further discussions in the group led to alternative methods of self-assessment, such as the writing of critical reflections in form of diaries or logbooks, which should enhance a reflective appreciation of how academic life affects the students in the course of their study, which comprise questions such as:

What effect have the academic culture and the world of thought which I am confronted with at university? Which marginal, which crucial changes have occured in the way I interpret the world? How do I experience academic culture: Gowns, rites of initiation and exit, heroic myths, behaviour in discussions, opening to and closure from the outside world, above all abstractions and scientific language?
How does this affect my own development, my attitude towards learning, science, social responsibility, my way of thinking and acting, my relationship to people outside higher education?
Which highlights are there? What has bored me, made me excited, irritated, frustrated, enjoyed, hurt and why? Which theories can I make friends with? How do I select appropriately, where do I get lost? etc.
It is a matter of reflecting one's own relationship to scientific thinking in the institutionalized setting of the university and a matter of testing theories for the usefulness for one's own means. These means can only be judged by oneself, and to do so is helpful in order to make one's own expectations and one's own entrance to theory expclicit. (Schneider, 1988, 81)

Another aspect proved important to be discussed among the members of this working group, the possibility for collaborative assessment in finishing a course successfully, in particular view to courses with high numbers of students, as one teacher states:

Oral exams in groups of 10 to 15 participants have been part of my routine in the past few years. The idea developed out of the observation that the traditional examinations covering the overall contents of the whole course was only seen as a routine procedure by the students which led to a behaviour of forgetting it all soon afterwards. My desire to achieve more affection and more endurance in keeping the knowledge they acquired, to make assessment part of the learning process, not to make it just part of the pass/fail business, led to the following suggestion:
The students bring in their own ideas and interests into the concept of the teacher, who introduces his or her preliminary plan at the beginning of term. H he presents a commentary resembling a contents list of the course design, which asks the students
- to regularly take part in the meetings,
- to choose one major part of the contents of the course and to deal with it intensively consulting further reading.

The examination at the end of term works the way that in a first round everybody presents his or her chosen topic and explains to the other group members
- why he or she has chosen that particular topic,
- which additional sources she/he has chosen to get further information,
- in how far those additional sources have contributed to a deeper understanding of the topic at all, if he or she can recommend them or if it would be better to restrain from them.
- If possible, they should also try to evaluate in how far those sources can be regarded as a contribution to scientific development.
In a further step everybody has to be open for questioning by the rest of the group, including the lecturer. The original question and answer type of questions soon develop into an intensive exchange of ideas and suggestions. It is not without reason that an atmosphere of mutual understanding develops out of this exchange. Therefore many students opt for this way of assessing their progress in the course by deciding on an intensification of learning, which at the same time leads to higher motivation in the course of the course.

This also becomes visible in the feedback sheets of the students, as can be derived from the following extract:

At first I thought deciding on this choice of assessment was an easier way of doing it. However, since the topic really interested me, I dived into it so far that I can now say I have never prepard so thoroughly for an examination. Moreover, the choice for my focal point has helped me to always find out from the others what they thought and in the end I got a fine overview of all the thematic areas which had been touched in the course. (Wieser, 1988, 75-77)

Another small group tried to work on the effect of the use of audio-visual aids in lecturing, apparently a common problem regardless of the disciplines the participants came from. There were two perspectives which seemed to be dominant in the work of the group: one perspective looked at the AV-media as instruments for making the lecture more effective (for example, by means of using the overhead projector or video facilities); the other perspective aimed at using the AV-media as a supporti: g device to evaluate one's teaching performance. The group members consisted of six to ten university teachers from the following disciplines: Mathematics, Physics, Medicine and Education. Apart from the individual research activities in class, the group met about three times per term for about two hours.

The first feedback on the effects of teaching was achieved with the help of simple questions to which students responded regarding certain concerns of the individual teachers, such as: What do the students like most/least? When is it most difficult to follow the lecture? What do the different media contribute to the learning process? After the discussion of the data in class and the analysi: of the results in the group, one group member's lecture was video-taped and first discussed in the small group. The findings of this discussion were used to create a more elaborate questionnaire referring to the class taped previously. The results from this questionnaire were discussed with the students in class and in the respective department afterwards, so as to make use of data with a broader range for organizational development. The group members also tried to reflect their own learning process both aurally and sometimes even in written form . By doing so, they not only wanted to monitor their development of the group but also to find out weaknesses in their work. The following extract presents part of a journal entry (cf. Holly, 1984; Holly & Smyth, 1989; Tripp, 1987), which was made shortly after a group member videotaped the lecture of a colleague.

When looking into the camera I don't know where to pay my attention to: more macro shots in order to get a better 'picture' of the whole situation or rather more close-ups in order to get as many details as possible. How often shall I swing the camera to the students as audience, the ones who are really concerned? Aren't faces showing boredom, for example, more convincing about their reaction than the full-sized portrait of the lecturer? (Bachmann, 1988)

Further discussions led the group to write up clear instructions for the use of video in classroom observation. Moreover, they invited an expert in the use of media from Klagenfurt University as a consultant, who also gave a presentation for other interested lecturers.

It is not possible to describe all the phases the group went through during the project. The following feedback from one of its member may give a personal view of how he experienced the working of the action research approach.

Originally, I only took part at the meeting in the project because as a member of the University Senate I felt obliged, just like lots of those other burdensome commitments one has to take part in without ever gaining any personal profit. However, soon I noticed that in this group people did not merely talk about various questions of higher education at our university from a theoretical perspective, but that the opportunity arose for improving my own teaching. First it was important for me to discuss with colleagues and students in an unembarrased and relaxed way. Moreover, I had had the desire to watch myself in my own teaching for some time. During one session in our small group one of my lectures was video-taped. Together with the other members of this group we developed a questionnaire to get further information from the students. Eventually, the results of this survey were discussed with my students and colleagues at the department.
This work has had some positive effects on my teaching. Certainly, knowing about the observation has had some effect on my lecture preparation. I now take more care than I did previously. The viewing of my lecture on video and the analysis of answers from the questionnaire have given me further help in improving my teaching. Now I'm getting more pleasure out of my teaching, which has also had some positive effect on the atmosphere in class. Thus I have succeded in a way to take out some stress from maths teaching at our faculty, and the success has even been noticeable in the students' achievement so far. (Netzer, 1988, 118-119

## Towards an attitude of institutional change

In the pilot phase described here, a guided build-up from plenary meetings to group sessions and self-study activities was initiated in order to support the participants in their new fields of research. There were no set rules for the allocation of time in the individual phases. We found, however, that it takes the participants considerable time to be comfortable with this new research domain. This should be allowed for in the program design. Once they have experienced their classroom as a valuable resource for assessing the teaching and learning process using their own documentation instruments or evaluation methods, the participants improve their own teaching by becoming more reflective about what is occurring in the interaction between the students and the teacher. Thus new questions arouse among the ones involved, such as

How much do we know about the way students receive our lessons?

Do they get the chance to find out about their teachers' processes of learning and thought?

Is there room left for their own thoughts which are essential for their personal and social development?

These questions are different from the ones usually asked. In traditional views teachres are mainly interested in the students' *products* such as exam results. The Senate Committee, however, sees human *processes* as an integral part of learner achievement. Moreover, it claims that the result becomes more sophisticated the more we rethink and reinterprete the processes involved in the phase of knowledge creation. If we want to bridge the gap between the products we expect from our students and the social processes leading towards those products, we have to find ways of developing new incentives through reflection in action. The basis for this increased reflectiveness is an assessment of the learning process from both the teacher's and students' perspective, as well as a step towards becoming aware of the institutional constraints in professional development as a process of liberation.

> At whatever level a student learns - to execute a particular performance, or kind of performance, or way of designing a performance, or way of learning - her evolving practice depends significantly on how she assesses her own learning. And the evolution of a coach's practice also depends on his ability to assess his own and his students' learning. Hence, coach and student, when they do their jobs well, function not only as practitioners but also as on-line researchers, each inquiring more or less consciously into his own and the other's changing understandings. (Schön 1988, 298)

The plenary sessions, which occurred less often in the second phase, were still necessary at that point and contributed to an exchange of ideas on a broader level. The aim of these meetings was no longer to provide introduction or supervision; instead, they became a kind of 'market place' for the exchange of experiences. Similarly to conference meetings in their disciplinary fields where researchers go to present their latest research findings, meetings on this level had action researchers discuss their latest findings in their teaching research across the disciplines. In this phase, plenary meetings also served as a base for collecting documents from the individual research activities by individuals and small groups. In this sense, they had the character of editorial meetings for the discussion of materials to be included in the working papers meant for distribution. These documents have meanwhile been published (in German) so as to make them available to a wider audience (Klug & Schratz, 1988).

The plenary meetings had another important function. They not only helped to open up individual classrooms to a wider audience of colleagues in other disciplines, but they also provided the participants with a broader view of what instruction originally meant to them. Looking at higher education from a reflective point of view and getting feedback from students helps in assessing the curriculum and leads to a more developmental view of teaching. Reflective teachers who have taken part in an action research program of this kind serve as change agents in a transformation process, which "involves an examination of basic premises about the clientele, aims, teaching-learning approaches, and curriculum for the institutions" (Apps, 1988, 14). Thus, institutionalized teaching and learning becomes part of organizational development, which is particularly vital in times when institutions of higher learning are feeling increasing pressure from the public and are therefore faced with the challenge of maintaining quality.

After assessing the first phase of the project "Researching While Teaching" at Innsbruck University, it can be said that this kind of action research approach to teaching in higher education is
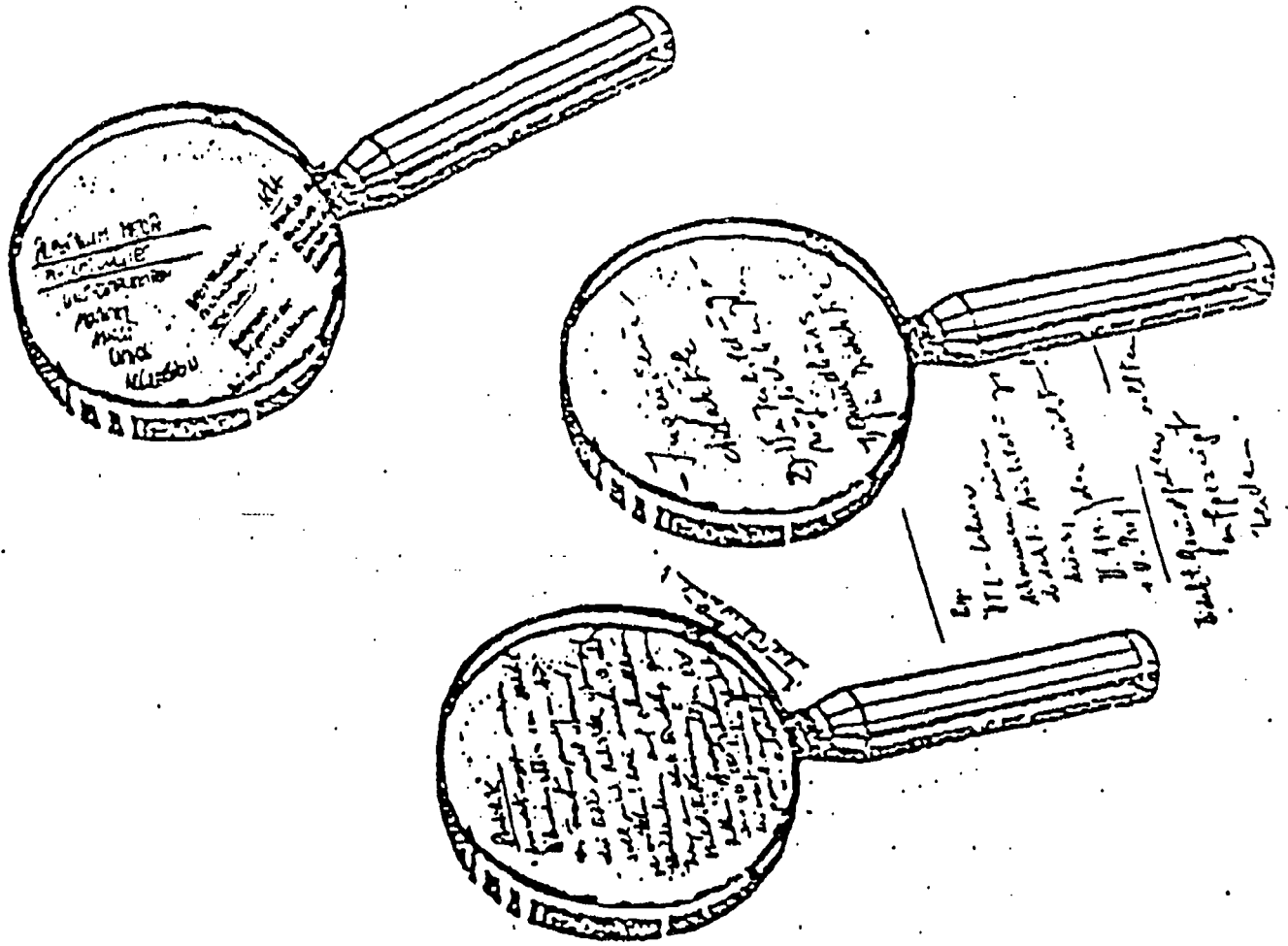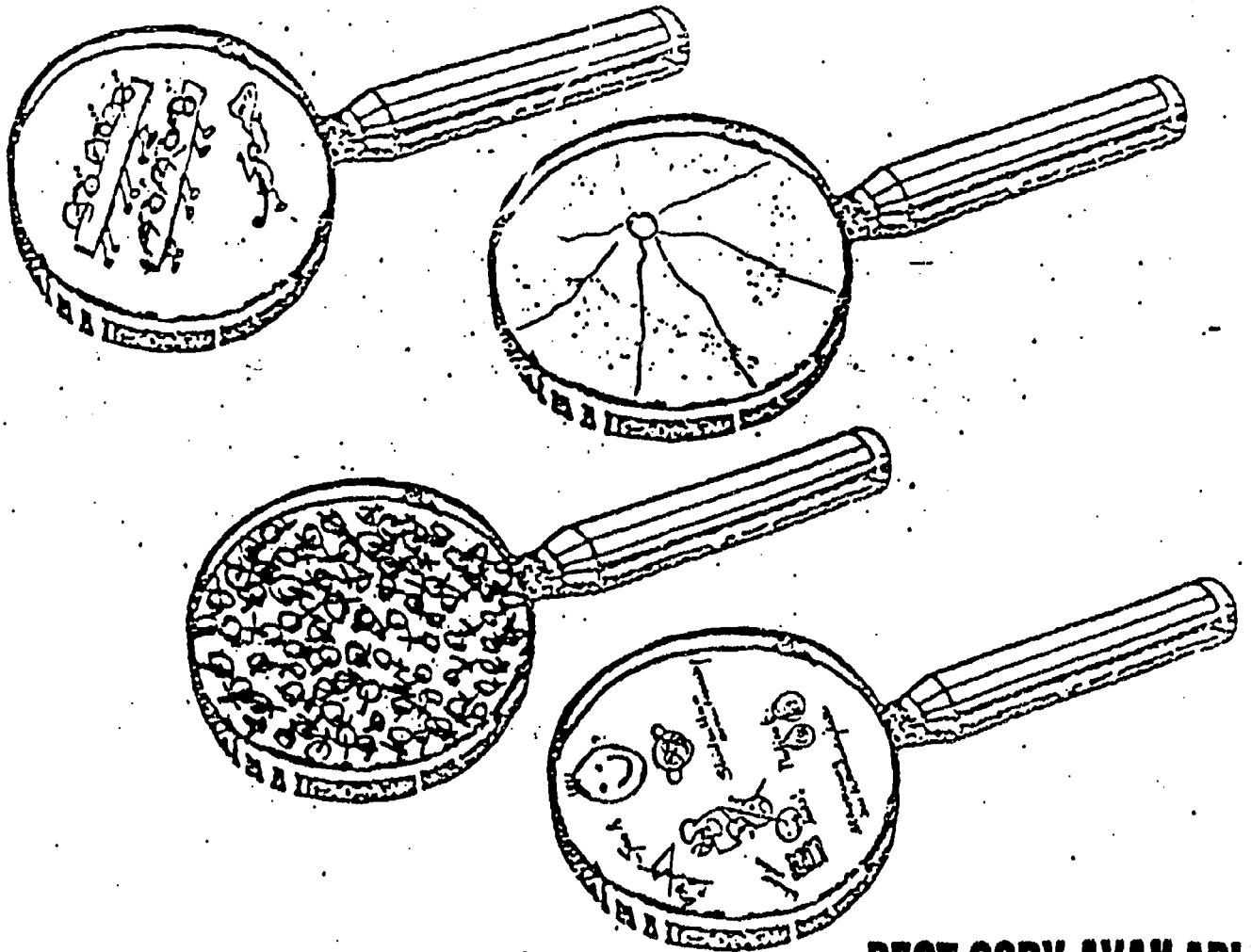
Figure 1

Figure 2

not only a valuable experience for the individual participant. Looking into one's own lecturing practice through the eyes of a researcher is a challenging task for both faculty and students if they are willing to venture into this "rich and virtually untapped resource for the improvement of teaching" (Cross, 1987, 6), curriculum and learning. Although the extra work sometimes meant spending more time on the actual teaching, most participants gained satisfaction out of this approach, as can be found by example in the following statement of a participant in the project:

> By dealing more intensively with my teaching commitments I got more joy out of them, which also contributed to the good mood I felt in class.

Moreover, through the 'ripple effect' of attracting more and more people in a department or institutional unit, this approach helps in making reflective teaching a vital part in organizational development. In this sense, developing collaborative self-reflection about teaching experiences can turn such an action research process into an "exercise in ideological deconstruction" (Elliott, 1989). This means that the lecturers' experience of class research was grounded in actually attempting to facilitate their professional development and not in theoretical inputs by experts of teaching in Higher Education. By doing so they articulated their own *practical theories* in action research. Mainly through reflection in the group or plenary sessions the theory embedded in the researching while teaching practices came to light, which helped the participants to see this as a valid theory of teaching and learning for interdisciplinary understanding. It was only when the faculty members learnt to accept what they regarded as strange and different in their colleagues' attitudes that processes of collective reflection and mutual understanding could develop. At the same time, the territories between the different tribal cultures started losing something of their strangeness.

## NOTES

[1] This is the English translation of the original "Forschendes Lehren" which gets closest to the idea expressed in the German title.

[2] In order to fulfill the requirements students at Austrian universities usually take a final examination in each course.

[3] Here and in the following the translation of the original German text is mine.

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