Quality Assurance in Higher Education

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Internal Evaluation – the First Step to Organizational Development at Universities

1. The evaluation of courses and teaching

1.1. Bases of the evaluation of courses and teaching

Since the early 90's the evaluation of courses and teaching as a measure to enhance and guarantee quality at universities has been a central issue of university policy throughout the Federal Republic of Germany (cf. Reissert & Carstensen, 1998). The increasing number of students and the exceeding capacities at universities were accompanied by cuts of public funds (cf. Erichsen, 1995). As a result, the universities had to cope with these facts in order to guarantee good teaching (cf. Lange, 1996).

In the meantime, apart from a number of initial reforms (cf. Schulz-Hardt, 1994; Weber, 1996) and the certification based on ISO norms (cf. Bühner, 1997a; b) the evaluation has taken a central position in the efforts to guarantee high quality of university courses and teaching (cf. Wissenschaftsrat, 1996).

1.2. Demands on the evaluation of university courses and teaching

Whenever university courses and teaching are evaluated, different interests and ways of looking at them have to be taken into account (cf. Barz et al., 1997), e.g. the students or their parents are interested in knowing which university offers quickly completed studies, has a good
reputation for its teaching and good relationship between students and lecturers and state-of-the art equipment; the general public and state are first and foremost interested in the transparency and efficiency of public funds; and the companies expect the graduates to be well educated in line with the latest science and technology and, what’s more, to have social competence.

To fulfil all these interests to the same extent does not only mean a challenge, but partly means competing and conflicting targets (cf. Reissert & Carstensen, 1998). Nevertheless, all groups involved have in common: the quality of teaching must be good and everyone is interested in evaluating and improving it permanently.

1.3. Forms of evaluation

1.3.1. Summative and formative evaluation

There is a fundamental difference between summative and formative evaluation. The first one means a summarizing view on the effectiveness of a given intervention; whereas the latter means a periodical view on interim results in order to modify or improve interventions regularly (Wottawa & Thierau, 1998).

Summative and formative evaluation do not exclude each other, but sometimes even complement each other so that the summative evaluation may be the basis for the formative evaluation.

Whereas the summative evaluation is a project per se, the formative evaluation is a process requiring a continuous and analytical look at the changing environment.

1.3.2. The internal and external evaluation

As to the organization „university“ the so-called „Dutch model“ (cf. Bülow-Schramm & Carstensen, 1995) has been established. This involves an internal and external evaluation of the course carried through by peers.

The internal evaluation is a self-description of the course using data, such as study and examination rules, descriptions of the contents and targets of the courses, statistical figures, rounds of talks and questionings, e.g. related to the evaluation of specific lectures and seminars. These data are then part of an evaluation report on the course.

The external evaluation is an assessment by peers from outside the university. These peers give recommendations and write them down in a
report, after checking the evaluation report, further information on the course and talks with the different status groups at the university.

1.4. The organization of the evaluation of courses and teaching

As above-mentioned, the evaluation of courses and teaching is not a project to be done at once, but a permanent process in a steadily and quickly changing environment, with varying requirements. Therefore, the evaluation of courses and teaching has to become an integral part of the university organization in the long run. In addition, the process should be marked and enhanced by all status groups and departments of the university. This can only be guaranteed by appointing an equally represented body capable of acting, on the one hand, and by an agreed upon concept, on the other.

2. The evaluation of courses and teaching at our university

2.1. Demands on the evaluation

The evaluation at our university, the FHTW Berlin, was carried out in order to improve the quality of teaching. This evaluation was closely linked with three targets: Firstly, the evaluation process was aimed at improving the communication among each other (among lecturers and between lecturers and students), by active talks on the quality of teaching. Secondly, we wanted to detect our strengths in the individual courses, but also find out the weaknesses in order to get rid of them. Thirdly, any evaluation is used to enhance the competition, i.e. among the courses and among the universities.

2.2. The form of our evaluation

The concept developed by the evaluation team is based on the Dutch model which – as described above – differs between the internal and external evaluation.

The internal evaluation consists of surveys about lectures and seminars, but also contains questions put to students at the beginning of their studies, students in practical training sessions and representatives of companies and graduates. Students' and lecturers' opinions on the conditions of their studies and work were also evaluated. Moreover, rounds
of talks based on the evaluation results took place between students and lecturers as well as students and administrative staff members. However, these data also included administrative statistics on the present and future numbers of students, the number of terms until graduation and the average grades for the final test papers. To make the courses comparable in their contents, a special evaluation structure was developed.

The report on these facts and other information about the specific courses were submitted to a body of experts for the external evaluation. On the basis of the report and after consultation with lecturers and students, the body gives recommendations and writes down its evaluation in a separate report.

2.3. The organization of our evaluation

The concept to realise all these ideas was drawn and adopted in agreements between the head office of the university and the departments supported by all status groups in the university. The vice president of the university is responsible for the evaluation of courses and teaching at the FHTW. She is assisted by a scientific staff member who co-ordinates the evaluation process. This central co-ordination was necessary to ensure the comparability of the various course evaluations. Over and above, the universities of applied sciences in Berlin work closely together in the process of evaluation, another fact that proves the necessity of a central co-ordinator.

A central body responsible for the elaboration of the concept is the working group 'evaluation of courses and teaching', whose members were appointed by the Academic Senate (representing all status groups in the university). All courses and central institutions of the university as well as representatives of the different status groups are represented in this body. (e.g. representatives of the administration, the women's representative, representatives on a staff council). As far as the individual parts of the administrative divisions are concerned, representatives from these divisions are invited to take part as guests in the meetings. The final agreement and decision-making on the concepts are done together with the heads of the individual departments who actively take part in the process of the organizational development.
3. The evaluation of lectures and seminars

As mentioned above, the internal evaluation at our university includes several surveys. This report is therefore focussed on the evaluation of lectures and seminars.

3.1. Instruments to evaluate lectures and seminars

In Germany we know several instruments to evaluate lectures and seminars, among them being the „Marburg Questionnaire on the Acceptance of Teaching“ (Baseler et al., 1995), „Questionnaires on the Students‘ Opinions on Lectures and Seminars at Universities“ (Diehl, 1998) and HILVE, the „Heidelberg Inventory of the Evaluation of Lectures and Seminars“ (Rindermann & Amelang, 1994). All three instruments fulfil the usual criteria for psychological tests. Our university decided to use the HILVE questionnaire as it is the most elaborate dimensional concept to record all lectures and seminars.

3.1.1. HILVE

HILVE by Rindermann and Amelang (1994) consists of 13 dimensions:
Figure 1: The 13 dimensions of HILVE by Rindermann and Amelang (1994)

1. **Structure** of the lecture or seminar describes its organization.
2. **Analysis** is subdivided into *volume* and *processing*. *Volume* means an explanatory dealing with the subject. Examples and the reference to theory and practice go more deeply into the subject and show the relevance. *Processing*: The subjects are not only imparted to gain knowledge, but the students are motivated to reflect on and critically look at problems.
3. **Teaching competence** decides whether the lecturer is able to convince through his or her work performance. Can he or she explain complicated matters, is he or she well-prepared for the lecture or seminar and does he or she speaks in a stimulating way?
4. **Engagement** raises motivation variables. Does the lecturer motivate the students, does he or she consider successful teaching important?
5. **Climate** indicates the atmosphere in which a lecture or seminar is conducted. Is there a good relationship between the lecturer and the students? Is the lecturer co-operative? The climate is influenced by both, the lecturer and the students.
6. **Interest** concerns not the interest of the theme, but of the lecture: Is the lecture/seminar interesting or tedious? The style and not the subject of the lecture or seminar is assessed here.
7. **Demands** measure whether the participants are strongly demanded by the teaching material and the speed of imparting it? Do the students understand the subject? **High challenges** directly measure the amount of demands.
8. **Learning** is a self-assessment. The students judge on the benefits that they receive out of the lecture or seminar. Here is the focus on the effectiveness of teaching methods.
9. **Theme** measures the personal interest in the subject. It is largely a *bias* variable, i.e. that the lecture or seminar and not the teacher are evaluated.
10. **Student lecture** rates the quality of the students’ reports, whether they are interesting, well-structured and useful. The lecturer’s moderation of the reports is also important.
11. **Diligence** measures in how far the students get involved. Do they do their homework and get prepared for the given lecture or seminar?
12. **Participation** – in contrast to diligence – records the activities during the lecture/seminar. Do the students succeed in expressing themselves?
13. **Discussion** asks for extensive and productive discussions.
All these items are answered on a seven-staged scale, whereby the two extreme points indicate either yes or no, e.g.:

<table>
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<tr>
<th>The lecture/seminar ist well-organized</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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**Figure 2: Example-item concerning the dimension structure**

### 4. Method

#### 4.1. University

Our university, the FHTW (University of Applied Sciences in Technologies and Economics), was founded in 1994. It is a comparably young university with about 8,000 enrolments. This means that the FHTW is the largest institution among the eight universities of applied sciences in Berlin. Up to 1997, measures to interview participants in the individual courses were only occasionally taken. Meanwhile, an all-embracing evaluation concept, irrespective of the specific studies is available which is to be translated into action in all details by summer 2001. The survey on lectures and seminars for the entire university, which is reported on here, took place in December 1998.

#### 4.2. Lecturers

A total of 396 out of 515 FHTW lecturers took part in the survey. This corresponds to a return quota of 76.9 per cent. Whereas 91 per cent out of 280 full-time lecturers participated in the survey, the return quota of those lecturers working on a non-full-time basis, amounted to 62.7 per cent. Those lecturers who didn't take part mainly came from the group of part-time and guest lecturers.

There was no difference between male and female lecturers participating in the survey. 91 female lecturers (23 per cent) and 305 male lecturers (77 per cent) participated in the evaluation. This corresponds to a sexual distribution of male and female lecturers at the FHTW as follows: 22.3 per cent and 77.7 per cent.

#### 4.3. Courses

In the winter term 1998/99 about 1,650 lectures and seminars were offered at the FHTW. Out of them 1,110 or 67.3 per cent were evaluated.
275 lectures and seminars (24.8 per cent) were given by female lecturers, 835 (75.2 per cent) by male lecturers.

4.4. Students

17,712 questionnaires were returned. 5,189 (29.3 per cent) of them were filled in by female students (in the summer term 1997 32 per cent of all FHTW students were female) and 11,369 (64.2 per cent) by male students. Data concerning female or male students were missing on 1,154 questionnaires.

5. Results

5.1. Results of the empirical survey

As one can see from figure 3, the mean value of the individual dimensions on the evaluation scale from 1 to 7 is more than 5 points, i.e. it is in the upper third. Exceptions are demands (mean: 4.2 points), here a value of 4 points corresponds to the appropriate demands, and challenges (mean: 3.0 points) which should be lower according to the definition. The students' diligence also rates low (mean: 3.6 points). The answers concerning participation (mean: 4.8 points) and discussion (mean: 4.7 points) are classified slightly below 5 points.

figure 3: arithmetical means of the individual dimensions
The lecturers were well evaluated in regard to the dimensions climate and engagement: there is a predominantly good and very good relationship between lecturers and students. Moreover, the lecturers succeed in motivating the students through their engagement.

Weaknesses can be seen in detail with regard to the factor effectiveness of teaching including structure, teaching competence, learning, interest and analysis.

All in all, the results of the survey are quite positive.

5.2. Feedback

After the statistical analysis, each lecturer was given an individual profile curve based on the average values and a chart showing the average values of the different dimensions. To compare the lectures and seminars with each other, the mean value of the course as a whole was shown in a graph. The heads of the departments were given a person-related evaluation for each lecturer of their programme.

6. Discussion

As shown by the quota, the evaluation was largely accepted by the lecturers and students. As a result, teaching at our university is characterised by high quality in general. This mainly concerns dimensions such as climate and engagement. The factor effectiveness concerning dimensions as structure, teaching competence, learning, interest and discussion are in need of improvement.

Suggestions to improve the one or the other factor could be obtained individually (i.e. for individual lecturers), collectively (i.e. for the corresponding programme) and centrally (i.e. through the university head office).

Because of the early feedback, the lecturers were individually given the possibility to discuss the results with their students and draw common conclusions for the further organization of lectures or seminars. As a result, the lecturers were advised to increase the number of student lectures in their seminars. The students should be given recommendations and instructions as to how to draw up a report. Likewise the proportion of discussions should be increased.

The empirical studies collectively did not only motivate talks between the heads of the departments and the lecturers, but also promoted the setting
up of special collective teams as far as they were not readily available. Results and conclusions from the survey could be discussed. In the case of students complaints about individual lecturers, the heads of department keep the person-related results as additional information in the future. In addition, the departments were recommended to consider the introduction of more active teaching and learning forms, which force the students to take a larger part in drawing up teaching contents and in being more active during their self-studies. Techniques of presentation as a part of teaching were also discussed. In order to increase the percentage of student lectures, more attention should be focussed upon specific lectures and seminars.

Initiated by the head office, several measures were centrally taken, to cope with the task of further qualification. As a result of the survey, specific lectures, seminars and workshops should be organized, supported in some cases by external experts.

From the year 2000 onwards, good teaching in each department will be awarded under the title FHTW-AWARD. This prize should not be understood as a "extra income", but will be reinvested into teaching, e.g. for a reference library, student assistant job or special technical equipment.

6.1. Looking ahead

Except for the consequences from the surveys, the internal evaluation will have further effects. First and foremost, the curriculum will be revised on the basis of the results of the surveys and discussions. Moreover, the departments are challenged to give their own recommendations to the department council as a basis for contractual agreements. The fulfilment of these agreements will have medium-term effects on the allocation of internal funds.

7. Literature


Bühner, R. (1997a). Errichtung und Zertifizierung eines Qualitätsmanagementsystems nach der internationalen Qualitätsnorm


