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Competence-oriented Course Evaluation and Follow-up Measures

Abstract:

In the course of the Bologna Process a precise definition of the different competences that students are to be conveyed during their studies came along. In agreements and letters of recommendation, such as the European Qualification Framework etc., learning outcomes are described. Thus, a competence-based instrument for the evaluation of courses (GEKo, Graz Model for the Evaluation of Competences) has been developed at the University of Graz. It focuses on different types of action competence (i.e. professional, methodological, social, personal, language and media competence) and comprises both the point of views of students as well as instructors. After consideration of learning outcomes in university teaching and evaluation, the emphasis has to be placed to the skills of instructors with regard to the paradigm shift in teaching. The follow-up-measure for improving teaching methods is a specific university didactic with a pool of instructors.

I. The Bologna Process as an engine of rethinking

In the context of the Bologna process, in creating a European Higher Education Area, there has been a profound change in the conditions and structures of teaching and learning. Keywords such as modularization, outcome orientation, ECTS, learning outcomes, etc. indicate the change. This is done in the context fundamentally altered decision-making, organizational and personnel structures, runs on the basis of new financial systems and is controlled by new quality assurance instruments (Schneider 2009). In particular, from the perspective of university didactic it should be interesting to know how this transformation towards a "Shift from Teaching to Learning" (a shift from instructor-centered to student-centered teaching) could take place corresponding to international views.

The education reform is seen as a student-centered reform and not only a structural reform in study programs, only concerning the study program architecture. It is a paradigm shift: that means that not only "input" of individual subjects but equally the "output" is important; i.e. the students should know which learning outcomes and what knowledge, they should have achieved after participating in a

course, module or study program. Therefore, learning outcomes are statements of what a learner knows, understands and is able to do after she or he has completed a learning process.

According to Blom (2000), the paradigm shift ("Shift from Teaching to Learning") is defined as follows:

Instructor-centric teaching	Student-centric teaching
• Instructor is center	• Student is center
• Transmission of information on the part of instructors	• Active acquisition of knowledge on the part of students
• The learning path is general, firm and standardized	• There are different ways of learning
• Instructors for students	• Student is self-controlling
• Lecturer explains the correct answers to problems	• Lecturer asks questions, answers given by students
• Lecturer directs learning	• Lecturer accompanies learning
• Static and unchanging	• Dynamic and fluctuating
• Instructors and students face each other	• Instructors and students work together
• Study design is based on tests	• Study plans based on feedback loops
• Students cannot participate in all sessions of a course	• Social skills are gaining importance
• Control by exams	• Immanent control

Teaching and learning represents a process of interaction which starts in the context of a course. Learning can be understood as a constructive process in which learners acquire new knowledge and integrate it into individually existing cognitive structures. In the process, students acquire knowledge and skills on the basis that already exists. Student-centered teaching assumes that a basic understanding is established to these individual learning processes. Instead of being taught only knowledge by the instructors, the students should be mentored to become increasingly individual and self-directed learners. For the students, learning does not only mean processing of passively acquired knowledge but the active participation in learning processes (Schumacher 2008). In courses with fewer participants it is easier to take the student-centric point of view into consideration than in lectures with a large number of students.
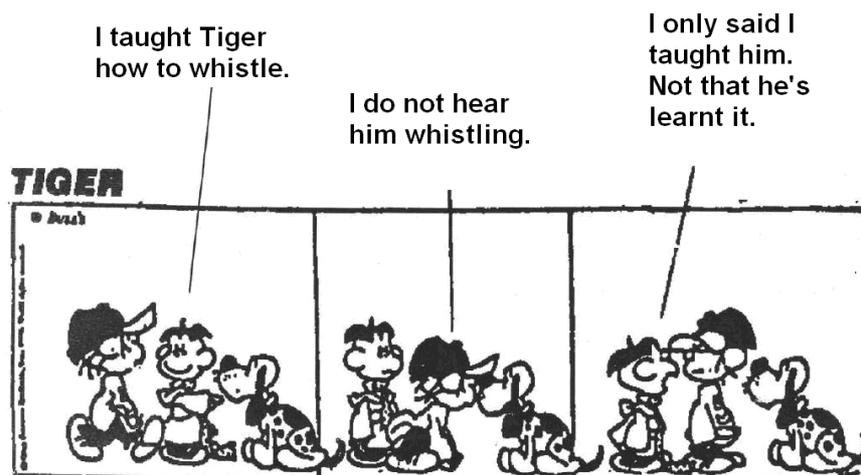
(Idea of John Wildt, Study Quality Conference, Hannover March 2009)

In the perspectives of the Bologna process, instructors are asked to rethink: It is necessary to restructure teaching from the perspective of learning. There again, students are expected to learn autonomously, to be willing to learn, to be able to structure their learning processes, etc. Instructors do not only teach skills for instruction, but also provide needed support to self-directing-processes as well as counseling and monitoring of learning processes.

II.   Competence-oriented course evaluation: GEKO – Graz Model for the Evaluation of Competences and its follow-up measures

By signing of the Bologna declaration, 46 European States agreed on creating an integrated European Higher Education Area by the year 2010. In the course of describing the various educational attainments in this education area, the European Qualification Framework (EQF) and its description of the graduates' qualification profiles provide a statement of the earned competences and skills (so called learning outcomes) and play an important role for changing from input to output orientation of teaching and learning. Such a paradigm shift focuses on the outcomes of higher education und its aim to impart competences in order to allow the first steps into the labour market (HRK 2004). Thus, it is an important function of the course evaluation to examine if and how well the imparting of competences has succeeded.

Therefore, at the University of Graz a multi-disciplinary team, consisting of members from both science and administration, has developed an instrument for the course evaluation that comprises learning outcomes and various levels of students' action competence corresponding to different types of courses.

Competences as a result of educational processes

When thinking about the different outcomes of educational processes, the term competence takes over a central role. Competences comprise an integration of knowledge, skills and attitudes that can be used in order to solve arising problems and succeed in handling (new) situations (Baartman et al. 2007).

The Graz Model for the Evaluation of competences (GEKo, Grazer Evaluationsmodell des Kompetenzerwerbs) focuses on action competence, which is a synthesis of professional, methodological, social, personal and media competence, as the main result of university teaching.

Professional competence (also known as field-specific competence) comprises declarative knowledge, i.e. specialized knowledge of one's subject such as knowledge of facts, concepts, theories, models and knowledge of connections and principles (Anderson & Krathwohl 2001). Because of professional competence students are able to relate, link and distinguish facts and theories.

Methodological competence within university's context means procedural knowledge with regard to finding ways and applying the learnt things as well as problem solving and decision making skills in a field of expertise. Methodological competence comprises knowledge of procedures, connections, linking of contents and applying work techniques. It enables to solving problems, transferring expertise into practise and questioning information critically (Peterßen 2001; Preiser 2003).

Social competence means interaction with other people as well as communicative and cooperative skills (Sonntag & Schmidt-Rathjens 2005). Before all, social competence applies to work-related and subject-related interactions such as social skills, team working, taking over responsibility in a group, organizing one's learning and working process, and achieving defined goals.

Within the context of the university, personal competence comprises the ability to estimate the amount of work needed to achieve a goal, to select and apply adequate learning strategies, to evaluate one's own learning progresses and work results and building on that to organize learning and working processes (Erpenbeck & von Rosenstiel 2003).

Media competence is affiliated with the four competences mentioned above. Besides knowledge about New Media and its handling, media competence includes the ability to use New Media for analyzing, exercising and evaluating the other competences (Baacke 1996; Dewe & Sande, 1996).

Imparting and transferring competences in different learning scenarios

Not every competence must be achieved in every single type of course. Depending on the type of the course and its corresponding teaching and learning methods, different competences are promoted. Therefore, GEKo differentiates between four types of courses:

- "instructor-oriented" courses (lectures etc.) which focus on professional and methodological competence;
- in "interactive" courses (seminars, exercises etc.), due to interactions between students and instructors, additionally social and personal competence are prominent as well;

- in "science-based practical trainings" (laboratories etc.) applied professional, methodological and personal competences are imparted.
- in "language-oriented" courses, i.e. courses that are related with foreign languages, the focus lies on applied forms of professional, methodological and language competences.

In courses that are held with the use of New Media media competence is facilitated as well.

Concept of the instrument

GEKo has been developed in order to enable the participants of courses to assess one's own acquirement of competences. According to the concept of competences mentioned above, GEKo comprises six types of competences: personal, methodological, social, personal, language and media competence.

Apart from questions to evaluate the acquirement of competences the following items are also components of the evaluation questionnaire: items which might influence the acquirement of competences such as attitude and behaviour of the students, i.e. interest, effort, previous knowledge etc.; items that deal with the general conditions of teaching and learning.

Development of the questionnaires

The basis for the generation of the questionnaire was a qualitative questioning of instructors and students (a) what students should be able to do after their studies and (b) which abilities, skills and knowledge students should gain in different types of courses. After having categorized the answers, questions were phrased related to the different types of competences. The results of both pretesting and validation data were satisfying. Subsequently, the structure of the items was confirmed with factor analysis.

Based on the questionnaire for students a mirrored questionnaire for instructors has been developed. Through the process of defining the aims of a course the instructors play an important role: GEKo provides an (optional) questionnaire for instructors where they can state the goals of the course. The comparison of students' and instructors' answers ("What have I learnt in this course?" resp. "What should students learn in this course?") allows the instructors to name the important items of the evaluation. Also, a comparison of the point of view of students and teachers is possible; the instructors gain revealing information to what extend the goals of the course have been achieved.

III. Follow-up– measure concerning competence-oriented course evaluation (support for instructors)

Extending skills of the instructors

After the implementation of the 3-cycle-system and considering learning outcomes in the curricula, the emphasis has to be placed to the skills of instructors with regard to the paradigm shift in teaching.

Traditionally, instructors decided about the content and the mode of exams of courses. According to the paradigm shift, instructors also have to take into consideration which competences and skills the students should have gained at the end and how they can be achieved. The student-centered approach would mean competence-orientation as it is realized with the course evaluation (GEKO) at the University of Graz. This tool is an excellent diagnostic and feedback instrument for acquiring competences of students. The paradigm shift has to be taken into consideration in university teaching. Teaching methods, didactics and the mode of testing are reasonable. The instructors will be taught within a specific university didactic how to incorporate the paradigm shift.

Concept: Didactic pool

As support for instructors in didactics and the organization of courses, a pilot project will start. Therein, designing a course and didactic issues can be clarified (mainly at the level of peers).

The following stages are to be anchored in the concept:

Professional input → Practice/Application → Professional feedback

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