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## Orientation on Learning Outcomes with Multidimensional Student Assessment



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### Abstract

The orientation towards learning outcomes implies the need for competence-based learning as well as a competence-based student assessment. The ideas for innovative self and peer assessment presented in this paper enable individualized business education. Furthermore, various methods and instruments for a multidimensional design of students assessment are introduced, such as assessment circle (360°feedback), portfolio, learning diary, skills demonstration, and appraisal interview.

## Introduction

Educational programs have recently shifted from an input orientated to an output orientated approach. It is no longer enough to concentrate on the input (e.g., classroom design or curricula) – there has to be an increased focus on output and outcome of the learning process. Very often, the term output is used synonymously to the term outcome, although they describe different notions. Whereas output is defined as the determined stage of development of the knowledge and competences of students after a specific point in time, the European Union (2009) states that outcome is concerned with what a learner is expected to know, understand, and be able to demonstrate after a successful completion of a process of learning. Learning outcomes are further expressed in terms of competences and skills, that can be demonstrated and therefore assessed (Adam, 2004). Accordingly, there is a relationship between learning outcomes, competences, assessment criteria, assessment, and teaching methods (Moon, 2004).

The objective of this paper is to focus on the assessment of competences of the individual learner and to explore several functions of student assessment in order to maximize the learning outcome of the individual learner. After discussing the theoretical background of assessment and competence-based learning, multidimensional instruments for student assessment are described.

## The Concept of Assessment

Education mainly intends to encourage the learning progress of the individual learner. In order to determine and ensure the increase in learning, it is necessary to check the student's attitude, motivation, learning strategy and performance. The regular documentation of knowledge, skills, abilities and attitudes allows teachers to control the desired learning outcome of learners (Riedl, 2004). The variety of purposes for which assessments are conducted shows how complex the process of classroom assessment actually is. The main functions of assessment can be divided in:

- a. Prognosis – assessment of learning: This summative form of assessment is used for selection and promotion, signalling students' progress, outcome, ranking and admission qualification to parents, other institutions, and society in general. It is done mainly at the end of a course or program and is completed with a final grading.
- b. Diagnosis – assessment for learning: This formative assessment is carried out throughout the learning processes, often more than once. It is interactive and aims at supporting further learning steps. The teacher gives feedback on the student's work, highlights strengths and weaknesses, and identifies special learning needs.
- c. Metacognition – assessment as learning: This form of assessment emphasizes the role of the learner. The student is involved in the assessment process as an active and critical self-assessor. Self-monitoring and self-correction is the ultimate goal, which is met when learners are able to manage their own learning process and to make changes as a result of self-reflection in order to reach the learning target (Earl, 2003).

Regarding the orientation on learning outcomes, it is the teachers' responsibility to focus on how students learn and how to design an effective learning environment. The selection of appropriate teaching techniques as well as the development of suitable assessment instruments is strongly linked to the learning outcomes (Adam, 2004). Therefore the assessment criteria (objectivity, validity and reliability) and further the chosen assessment instruments are implied by the learning outcome and its

resultant competences (Moon, 2004). The evaluation of learning outcomes or rather competences is mainly conducted with the function metacognition (assessment as learning) because of its collaborative nature.

As aforementioned, the focus on learning outcomes requires competence-based learning methods which lead to competent individuals. Adam (2004, p. 6) describes a competent person as “someone with sufficient skills and knowledge and capabilities”. The definition and background of competence-based learning is described in the following chapter. Furthermore, the concept of the Practice Firm as an example for a competence-based learning method is introduced.

### **The Concept of Competence-Based Learning**

The elementary objective of all kinds of education and teaching is the acquisition of a holistic ability to take action by the learner. In German, the term *Handlungskompetenz* is used to indicate a person’s competence to be able to solve problems self-dependently according to a given situation in life (Peterssen, 2001; Riebenbauer & Stock & Slepcevic, 2009). Common learning and teaching strategies which aim to develop and further develop the learners’ competences in decision-making and self responsibility are e.g., active learning, contextual learning, experiential learning, situational learning, applied learning, and problem-based learning.

The concept of competence-based learning goes back to the theories of vocational and progressive education with two main representatives Dewey and Kilpatrick. Their learning theory approach of the project method also known as learning by doing mainly influenced today’s learning strategies by introducing the four steps purposing, planning, executing and judging (Dewey, 1994; Berchtold & Stock, 2006). The goal of competence-based learning is to equip learners with the ability to take action which enables them:

- to handle complex situations in life,
- to solve problems autonomously,
- to act self-responsibly and self-dependently,
- to complete actions which are goal-orientated, planned and reflected on,
- to be pro-active towards their own learning progress,
- to develop different competences (Peterssen, 2001).

Figure 1 shows that this holistic ability to take action also called *Handlungskompetenz* results from the intersection of professional, social, methodological and personal competence. Classroom lessons can not focus on all four competences evenly and all the time because teaching stresses different aspects depending on learning target, topic, content and method (Peterssen, 2001). However, teachers have to take care that all four competences are considered sufficiently to gain a comprehensive ability to take action. This needs adequate, multidimensional learning and teaching methods.

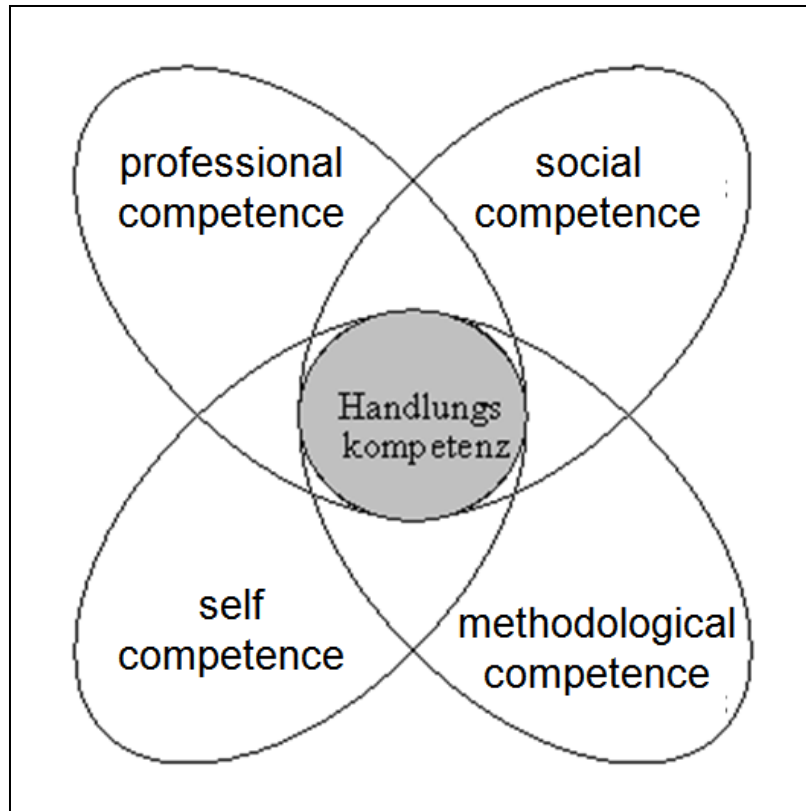


Figure 1. Holistic-integrative ability to take action (Peterssen, 2001, p. 14)

Business simulations are significant examples for competence-based learning with the important variation Practice Firm. Several terms are used for this complex learning and teaching method all over the world, e.g., Virtual Enterprise in the United States, Virtual Company in Asia and Training or Practice Firm in Europe.

Practice Firms can be defined as pedagogical learning places where procedures similar to real-life companies are executed based on business principles in a virtual market economy. Business and economic systems are simulated as realistically as possible to enable trading and cooperation within the national and international network of Practice Firms. The main difference between real-life companies and Practice Firms is that no real goods, services and money are exchanged (Berchtold & Trummer, 2001). The method Practice Firm aims at enabling learners to act independently and to make their own decisions according to existing business rules and legal regulations. While working and learning in this close-to-reality business environment, the students can put their theoretical knowledge into practice to train key qualifications and gain new business skills. Thus, the Practice Firm offers the possibility to develop the learner's professional, social, methodological and personal competences to operate autonomously in a given situation (Riebenbauer & Stock & Slepcevic, 2009).

### **Some Methods for Multidimensional Student Assessment**

Two Practice Firms are established at the Department of Business Education and Development at the University of Graz in order to represent a practice-orientated education and to optimally prepare students for their potential role as a teacher of business and economic subjects. The first Practice Firm *KFUNline Übungsfirma-WeiterbildungsgmbH* has been operated since 1996 and offers further education on the Practice Firm market. The second Practice Firm is called *eXpand International Consultancy GmbH* and was founded in 2004 and supports other Practice Firms in going international

with market analyses and consulting services. The students in these Practice Firms have their own office where they carry out all day-to-day business activities according to their line of business. Additionally to the office work, three-hour meetings are held weekly to discuss commercial and pedagogical topics as well as to reflect on learning processes (Riebenbauer, 2004).

The following instruments for a multidimensional assessment are results of the authors' teaching experience with these Practice Firms at the University of Graz. All presented instruments are used in the Practice Firms although not all instruments are always used at the same time. The instruments will be shown by the example of the Practice Firm *KFUNI/ine*.

Requirements of this complex learning method can be met by the use of instruments for a multidimensional assessment of student's achievement. The connection between requirements and assessment instruments is shown by the following examples:

- Learners must be able to act independently (e.g., assessment by skills demonstration, assessment sheet).
- Learners should not be left alone with their problems (e.g., assessment by learning diary, assessment circle).
- Learners need to be accompanied, advised and supported by teachers in the Practice Firm (e.g., assessment by e-portfolio appraisal interview).
- Learning processes or actions in the Practice Firm must be goal-oriented, planned, autonomous and complete (e.g., assessment by portfolio) (Berchtold & Stock, 2006).

All introduced assessment methods are either based on the concept of self-evaluation or on the concept of evaluation by others. Both concepts help students to become aware of their processes of learning and lead to a reflection upon their actions. Furthermore, both concepts allow students to gain autonomy because of their chance to take part in their assessment by evaluating themselves or their colleagues (Winter, 2008).

#### *Assessment Circle*

Based on the concept of 360°Feedback, the assessment circle is used for self-evaluation as well as for evaluation by others. It can be inserted at various stages of the course to illustrate the learning process and learning progress. Moreover this instrument enables students to be aware of their self-perception compared to how they are perceived by others (Paradies & Wester & Greving, 2005). Figure 2 shows the assessment circle at the Practice Firm *KFUNI/ine*.

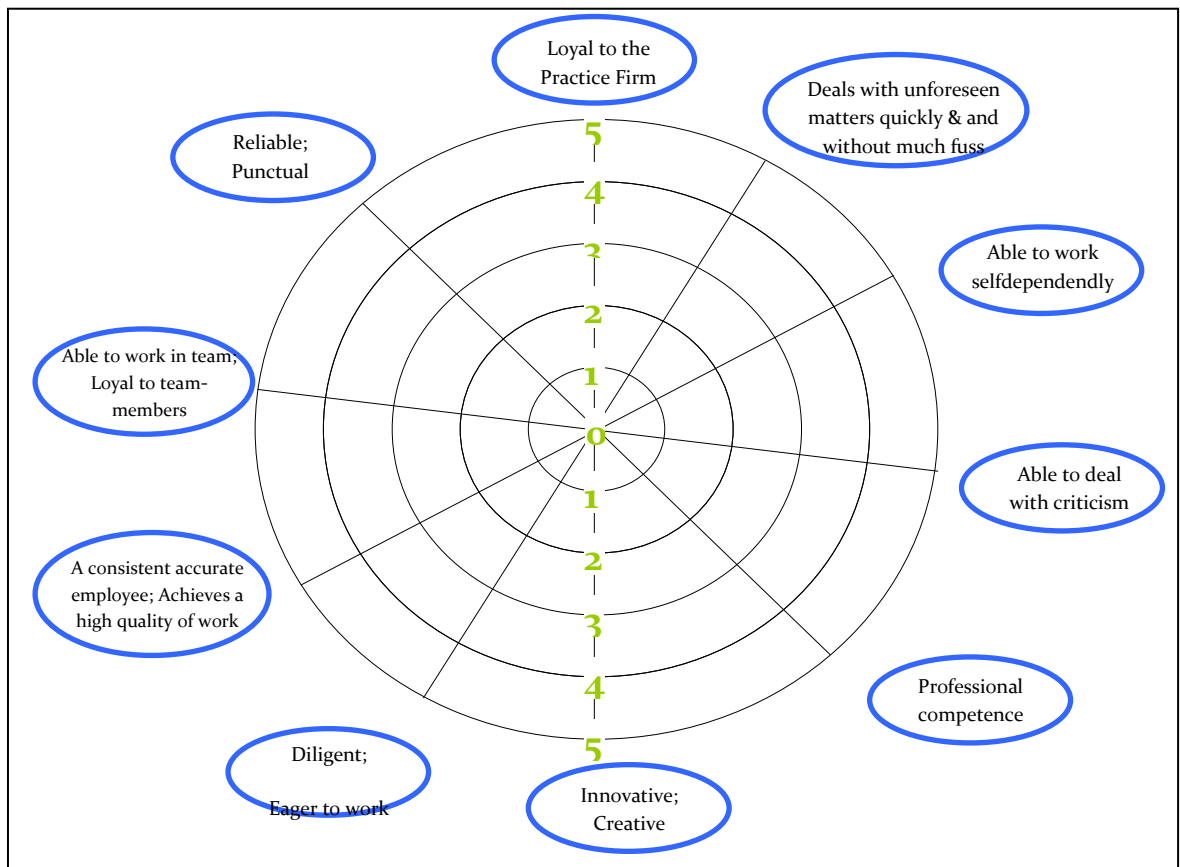


Figure 2. Assessment Circle in a Practice Firm

At KFUNI/line this method is used to give students a clear picture of the maturity level of their own skills. It enables students to recognize the gaps between the current and desired maturity level in connection with their work at the Practice Firm.

#### *Assessment Sheet*

This instrument is used to evaluate the different competences of students by their colleagues. At the Practice Firm KFUNI/line, the criteria for this instrument are defined by the management, according to the four main competences of Peterssen (2001). It should be remarked that students do not like to grade their colleagues. Winter (2008) describes that students give critical feedback but are unwilling to give marks. Nevertheless, students are very often in a better position to evaluate certain criteria, as they have a better overview of their colleagues' performance and workload than teachers. This is especially true for group work outside the classroom, like the daily work in the Practice Firm office.

#### *Portfolio*

The portfolio is a personal collection of objects, which describe the learning and working career, experiences and achievements of students (Winter, 2008). The organizational flow of a portfolio is described by the three essential steps "collect, select, and reflect" (Belgrad, Burke & Fogarty, 2008). This instrument shows the learning progress over a long-term period and allows comparing students' performances. At KFUNI/line the portfolio contains different works of the students, partly chosen by them (e.g., application diary, personal learning targets, reflection report).

#### *ePortfolio*

"The ePortfolio is a personal digital collection of information describing and illustrating a person's learning career, experience and achievements" (EifEL – European Institute for E-Learning,



2009). This instrument has been introduced at KFUNI*line* to promote the students' self-reflection of their learning processes. Furthermore, the ePortfolio enables a customized skills enhancement and visualizes the development of competences over long time periods. In the future, the ePortfolio will also be implemented in the Master-Curriculum *Business Education and Development* at the University of Graz and students will therefore get professional guidance and coaching.

#### *Learning Diary*

Winter (2008) describes this instrument as a personal report about observations, musings, and feelings with regard to the learning process. It is possible to integrate the learning diary as a part of the portfolio as demonstrated by the KFUNI*line*. Here, students use the learning diary to write and reflect on their daily work within the Practice Firm. They also have to include a chronicle of the working hours.

#### *Skills Demonstration*

Adapted from the Finish National Board of Education (Räkköläinen & Ecclestone, 2005), skills demonstration is also implemented at the Practice Firm KFUNI*line*, where students demonstrate their professional skills which they have improved in the course of their work within the Practice Firm. Skills demonstration is assessed by the Practice Firm teacher and contains for example the presentation of the financial statement or the moderation of a weekly meeting.

#### *Appraisal Interview*

The appraisal interview is based on the concept of management by objectives and also conducted at the Practice Firm, where this instrument is divided into two parts: The first part is held at the beginning of the term, by collaboratively fixing targets between teacher and students. This leads to a higher motivation of students and allows them to work independently and make their own decisions. The second part takes the form of an appraisal interview conducted at the end of the term and contains the topics learning success, achieved and failed targets, problems, team work and atmosphere in class.

## **Conclusion**

This paper showed how the presented instruments can be implemented for multidimensional student assessment, by using the example of the Practice Firm KFUNI*line* at the University of Graz. All instruments are influenced by a wide range of other aspects such as objectives and outcomes, as represented in Figure 3. The holistic assessment of competences, as a result of outcome orientation, requires a clear statement of the objectives, expressed as learning targets. Furthermore, supporting measures like warning systems (in case of bad marks) or the activities to guarantee the transparency of the assessment requirements and assessment criteria should be implemented.



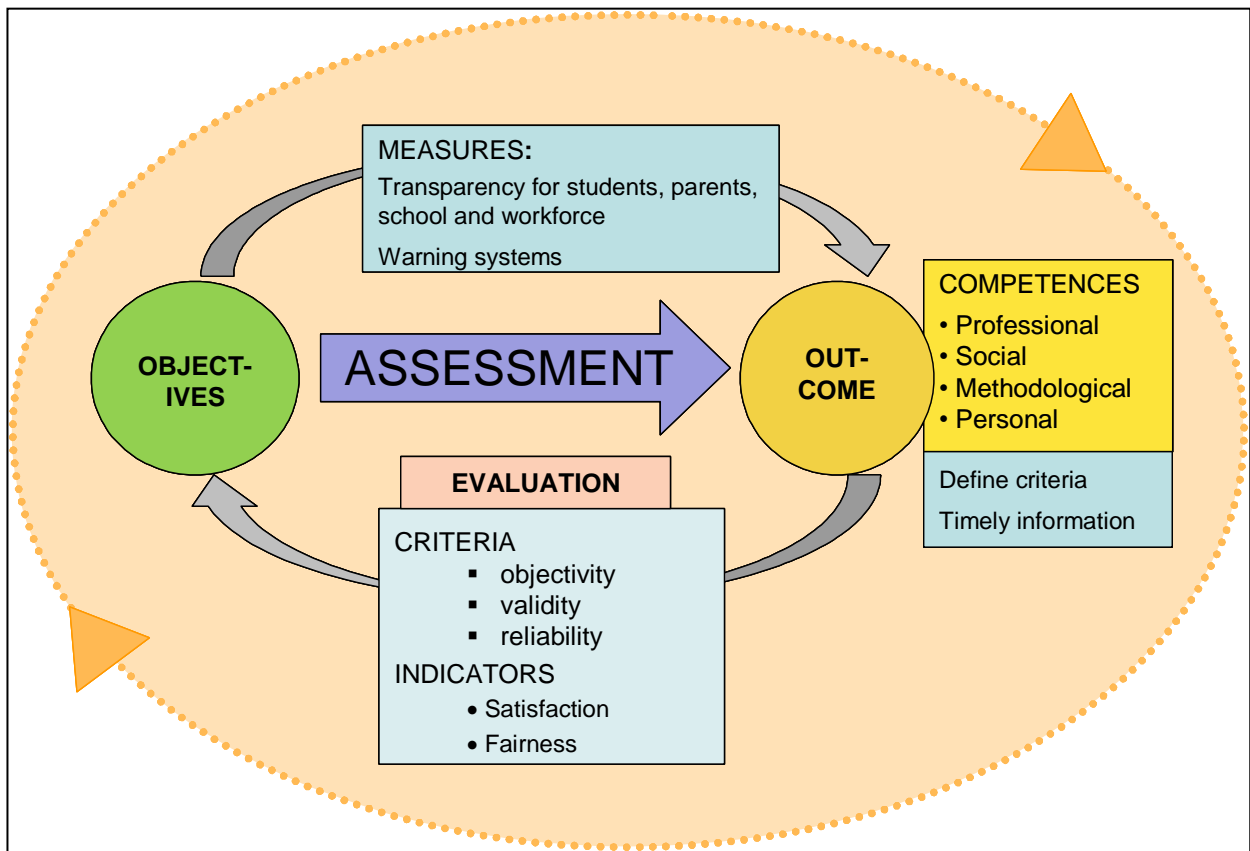


Figure 3. Competence-based assessment

The consideration of those measures in combination with clearly defined assessment criteria allow the evaluation of the conducted assessment. Indicators for a successful evaluation are given by the satisfaction with the procured information about the assessment and the perception of a fair assessment.

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