

# Chapter 14

## Assessment and Meta- Assessment:

### The Theoretical Model of Ecodesign of Formative Assessment in Higher Education

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#### **ABSTRACT**

*This chapter describes the theoretical model of ecodesign of formative assessment in higher education. In this context, the formative assessment is the technology of measurement, feedback, and appreciation that guides the training of teachers' professional competences throughout their lives. The basic idea reflected in the chapter starts from the assumption that the teacher, the student, and the content are co-participants in the learning process, the maintenance of the process being assured by communication with feedback. The chapter consists of three sections. The first section describes the differences between the classical model and the extended model of formative assessment, the latest definitions of formative assessment, meta-assessment, and ecodesign. In the second section are presented the contradictions on the basis of which the research problem is established. The chapter ends with the theoretical model of the ecosystem of the formative assessment based on the instructional dynamic and flexible strategy and also with the training program of formative assessment competence.*

#### **INTRODUCTION**

The assessment is the systematic method of accumulation of results through tests, questionnaires, observations and all sorts of examinations applied in the real didactic process or in virtual learning environments in order to obtain data or information about the quality of instruction, of learners or of developed programs. The assessment can be oral, written, and computerized. Assessment methods are the procedures

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and techniques of listening or selective conversation, usually with a small group of students, and written assessment methods involve the development of various didactic materials by the teacher or the student. Written assessment methods are more advantageous on the grounds that they are more transparent, more productive, and the results can be easily compared. *Computerized assessment* is „an effective method of building knowledge / skills / competencies <...> the basis of the method is the principle of learning by action and modeling the personality through action” (Railean, 2009, p. 101).

In psycho-pedagogical science, the most studied method is the measurement of student achievement (Stevens, 1951; Godshalk, 1966; Glaser, Nitko, 1970 etc.). With the evolution of computers and digital media, things have changed to the advantage of formative assessment. The formative assessment concept was defined by Scriven (1967) and afterward was taken over by Bloom (1968). Lately, it goes from measurement to formative assessment, but only from the perspective of measurement science. However, the basis of measurement is the observable difference (e.g. higher / lower, correct / incorrect, etc.). Shepard, Penuel and Pellegrino (2018, p.1) remark that measurement science could make a significant contribution to the methodology of formative assessment and marking practices. Meanwhile, the measurement may distort the assessment if the emphasis will be on quantification of data rather than on thinking.

The assessment is a complex multidimensional process which, in relation with the strategy that integrates in the instructive-educational process can be classified in:

- **Initial Assessment:** Establishes the student’s level of knowledge of the subject matter;
- **Formative Assessment:** Improves learning and contributes to improving learning outcomes;
- **Summative Assessment:** Measures learning outcomes and quality of teaching.

This chapter describes the formative assessment that implies related aspects to “identifying strengths and weaknesses of students that helps them to reflect on their own learning processes and to guide their learning to achieve progresses; that enhances student autonomy and responsibility for learning, which guides and monitors the didactic design” (Birnaz & Spinu, 2016, p. 81).

Formative assessment can be described as an ecosystem - a community of biotic and abiotic components that co-exist and functions as a whole, except that each component is evaluated depending on assessor skills. Meta-assessment is a new concept from the area of the theoretical, observational and experimental investigations (Ioannidis, 2018) and refers to *assessment of assessment* (Fanelli, Costas & Ioannidis, 2017). According to Wengrowicz, Dori, and Dori (2017, p. 191) formative assessment is the way to provide collective feedback in project-based learning, and meta-assessment is the way to assess the qualities and work of each student by the teacher and / or by other students. Therefore, assessment and meta-assessment are two complementary concepts, the feasibility of which is necessary to be studied.

The chapter includes three sections that bring a holistic approach to the problems of the ecosystem of formative assessment in higher education. The first section describes the conceptual landmarks of the formative assessment, highlighting the differences between the classical model and the extended model, the definitions of formative assessment, meta-assessment and ecodeign. The second section describes the dialectical and psycho-pedagogical contradictions on the basis of which the research problem is established. In the third section is described the instructional dynamic and flexible strategy and the methodology of training formative assessment competence based on this strategy. The chapter ends with the description of the conclusions and further researches concerning formative assessment in higher education.

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