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# CUMULATIVE SYSTEM OF STUDENTS' COMPETENCIES ASSESSMENT IN HIGHER EDUCATION

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This article is dedicated to the problem of competencies assessment, which is a new reference framework of educational outcomes. It proposes a systemic and contextual approach to this process focusing on the following issues: understanding the multifunctional phenomenon of competencies, gradual manifestation of competencies in different contexts, diversified range of assessment forms and techniques determined by the contexts and peculiarities of competence's manifestation, accumulation of points during learning-assessment process, determination of ranking concerning the level of competencies possession.

Keywords: competencies, competencies assessment, ranking, competencies taxonomy, methodology of competencies assessment, level of competencies development, learning unit, gradualness and polyfunctionality of competencies.

### SISTEMUL CUMULATIV DE EVALUARE A COMPETENȚELOR LA STUDENȚI ÎN CADRUL ÎNVĂȚĂMÂNTULUI SUPERIOR

Articolul este dedicat problemei privind evaluarea competențelor – un nou cadru de referință al finalităților educaționale. Se propune o abordare sistemică și contextuală a acestui proces axată pe: înțelegerea fenomenului polifuncțional al competențelor, manifestarea graduală a competenețelor în diferite contexte, ansamblu diversificat de forme și tehnici de evaluare determinate de contexte si particularitățile de manifestare a competenței, acumularea de punctaj pe parcursul procesului de învățare-evaluare, stabilirea clasamentului privind nivelul de posedare a competentelor.

Cuvinte-cheie: competente, evaluarea competentelor, clasament, taxonomia competentelor, metodologia evaluării competenețelor, nivelul de formare a competenețelor, unitate de învățare, gradualitatea și polifuncționalitatea competentelor.

#### Introduction

Designing approaches concerning the competencies assessment in educational framework is at the initial/ incipient stage.

The complexity of the problem is determined by objective complexity of the process of assessing the learning outcomes, because the competencies represent polyfunctional acquisitions, are transdisciplinary, characterize the quality of student's personality and are a product of learning act.



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Competencies assessment represents the central component of educational process (along with teachinglearning), but also the decisive component of didactic system's functionality.

Assessment is a basic means of achieving feedback that provides information necessary for making decisions of adjusting/developing the education system.

Therefore, assessment represents a complex psycho-pedagogical act which establishes the relevance and value of academic results, manifested in the form of competencies, by relating them to a system of pre-established indicators.

To evaluate the competencies, it is necessary to orient to their real manifestations: outcomes, the ability to perform an activity in a real or modeled context. Indicators, forms, methods and techniques of assessment in their integrity must allow/assure diagnosing the level of competencies development in action/activity/context.

At present stage there are more ways to assess knowledge, capabilities/skills, but also the level of the competencies developed.

However, they do not represent a well-grounded system and do not provide full information about the real level and dynamics of competencies development during the learning process and at the end of this process.

The competencies development is performed in stages and gradually through interconnection of studying different academic disciplines both in theoretical and practical plane. Diagnosis/assessment of competencies can be carried out during the learning act and at the final stage: BA, MA, PhD.

In this situation there appears the problem of substantiating a system of competencies assessment during the process and at the end of training.

#### Competencies and concept of competencies assessment

Competencies as object of assessment

In this article is accepted:

- 1) Definition of competency, formulated within TUNING project: "Competencies represent a dynamic combination of cognitive and metacognitive skills, demonstration of knowledge and understanding, interpersonal, intellectual and practical skills, as well as, ethical values. Competencies are developed in all subjects and are assessed at different stages of the study program. Some competencies are specific to a particular field of study, but others are generic (common to any study program). Usually, development of competencies takes place in an integrated and cyclical way throughout the whole program".
- 2) Definition developed by X. Roegiers "an integrated set of knowledge, skills, attitudes, practiced spontaneously, which allows performing in a convenient way a role, a function or an activity" [1].

These definitions are coherent with the basic characteristics of competency formulated by J.Henry and V.Cormier [2]:

- it is complex integrates the knowledge, strategies, skills, attitudes in a complex process of manifestations; mobilizes cyclically and repeatedly, in increasingly complex contexts, a process which requires simultaneously all its components, thus, is developed gradually;
- it is relative though it is an educational outcome, a competency does not ever get a final formulation, being developed continuously throughout life;
- it is potential unlike a performance that can be measured or ascertained and refers to past or present, a competency can be designed and assessed, the possibility of its mobilization generates different performances in future, in different contexts of independent learning;
  - it is carried out in a particular situation is developed gradually through changing educational situations;
  - it is transferable is applied to new situations (changing means or improving procedures);
- it is acknowledged and linked to needs and intentions includes the idea of outcome and can be managed by the one who possesses it, thus, advancing in metacognition (knowledge-of-itself, the Socratic one).

In the context of competency's definitions and its basic characteristics, we can draw/deduce the following terminological embodiments: A competency, in its different forms of manifestation and complexity, represents an *finality* which can be measured/assessed by the corresponding descriptors.

The teleological approach to educational outcomes constitute axiological, psychological and pedagogical foundation for classification of competencies in relation to different concepts, criteria and indicators.

The problem of competencies classification is a difficult and contradictory one. In most cases, disagreements, opposing interpretations of the phenomenon derive either from the confusing substance of competency (on

Table 1

psychological, pedagogical or teleological plane), or from the interpretation of competency in a given context from the perspective of different classification criteria/indicators.

Generalizing different approaches to taxonomy of competencies and taking into account the suggestions launched in the European Qualifications Framework and the National Qualifications Framework, we propose the following classifications of competencies for higher education:

- 1. on the dimension of generalization degree:
  - generic;
  - specific.
- 2. on the dimension of specification and ranking degree:
  - generic
  - a) key competencies/transversal/transdisciplinary transferable between different fields of study;
  - b) professional competencies for a wide domain of activity, group of professions and specialties transferable within the corresponding profile: cognitive and functional-actional.
  - specific
  - a) professional-specific to a specialization/double specialization: cognitive and functional-actional;
  - b) study disciplines:
    - general for the given discipline;
    - specific for learning unit [3].

To elaborate a system of competencies assessment, it is important to determine the structure of competencies, what allows to identify the indicators of assessing the constituent competencies throughout the learning process, as well as the competencies in their manifestation at the end of the learning act.

The structure of competency can be established in relation to one or another definition/ approach to this phenomenon, but also to the complexity degree and manifestation forms.

Thus, from the definition of competency as "integration of knowledge, skills, attitudes ..." we can deduce the triadic structure of competency: knowledge, skills/abilities, attitudes/values/ competencies in their integrity.

Basing on the manifestation mode of competency as outcome, it may include the following components:

- action/activity represented by a verb;
- indicator of the outcome time (knowing-comprehension, application-operation, integration-transfer);
- conditional aspect of the outcome (domain, discipline, subject);
- general indicator of the level of action's or product's realization in the given learning context.

Structure of competency according to outcome [4]

| Nr.<br>crt. | Verb: action/activity | Domain/discipline/<br>Subject         | Level/mode/ norm   | Context  |
|-------------|-----------------------|---------------------------------------|--|--|
| 1.          | Didactic projecting   | from perspective of curricular theory | in modules/units<br>of learning for<br>discipline "X"                          | related to corresponding<br>framework of qualifications<br>and to students' level of<br>training   |
| 2.          | Research of           | educational phenomena                 | by interconnected<br>application of<br>theoretical and<br>experimental methods | comparison of obtained<br>results in dynamics, making<br>conclusions and submitting<br>corresponding methodo-<br>logical recommendations |

## • The concept of competencies assessment

In the framework of determining the concept of competencies assessment it should be taken into consideration the existence of some problems and dysfunctions in the current system of assessing students' academic results, and namely:

• lack of understanding the connections/interconnections in establishment of the competencies development levels (of gradual hierarchy);

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- lack of an accepted common/general approach concerning the competencies taxonomy included in the evaluative framework:
  - lack of some standardized tools for competencies assessment;
- existence of a gap between the methodological guidelines for competencies training as outcomes and the real list of competencies submitted to assessment.

In other words, the learning outcomes should be assessable and be in compliance with didactic strategies, but the assessment indicators should be related to the outcomes achieved in the learning process.

The concept of competencies assessment presents a strategy/system which is based on the following provisions:

- The matter is organized in complex learning units/or modules.
- During and at the end of studying each learning unit, the assessment is performed of all learning activities and the results achieved - units of competencies in points.
  - Measuring the quality of learning act is carried out through different forms: test, case study, colloquium, etc.
- Competencies assessment within the learning unit is measured in points and represent a basis for determining student's ranking.
- Competencies assessment within the learning unit represents, on one hand, assessment of competencies constituencies on a higher level, and, on the other hand, represents assessment of the manifestation of competency at the given stage and in a particular context. In fact, competencies assessment in this case is an interim phase in the process of assessing academic results.

Substantiation of a system of competencies assessment can be done in three aspects/ modalities: application of information/communication technologies (elaboration of some special programs for standard evaluation), reconceptualization of traditional mechanisms for assessing academic results, combination of both approaches in the evaluative framework.

In this context, we formulate a set of recommendations:

- ✓ The assessment system must be efficient and mobile for application in the study of different disciplines.
- ✓ The assessment system should be polyleveled/polygradual, capable to offer different variants of items with various complexity degrees. The total number of points can be obtained in different ways.
- ✓ The system of competencies assessment must be designed so that the results measured in points or percentages could be converted into grades.
  - ✓ The system of competencies assessment must ensure the maximum objectivity.
- ✓ The system of competencies assessment must be oriented at student/student-focused. The student must see/know how the level of competencies is modified/increased in the learning process. The student must know precisely concerning each item which competency or competency unit will be assessed.

Thus, competencies assessment system has several levels: transdisciplinary, disciplinary, interdisciplinary, polydisciplinary (in various curricular areas). As a rule, these assessment levels fall into two aspects: evaluation within studying a discipline and trans-inter-disciplinary evaluation.

In the first case, discipline specific competencies are assessed, if the second one, assessing transversal/ professional competencies are assessed through tests including the standardized ones. Assessment is carried aut on a cyclical basis and is subject to monitoring which aims to establish the dynamics of changes in the quality of standards in the university framework. The monitoring will be focused on:

- studying the level of students' competencies in a discipline or/and more disciplines during the semester, academic year;
- analysing the results and quality of the trained competencies obtained during the semester, academic year;
- complex analysing the level of students' training during a time period (semester, academic year, more years of education).

Therefore, competencies assessment system represents a complex construct with more elements that are in permanent interconnection (Figure 1).

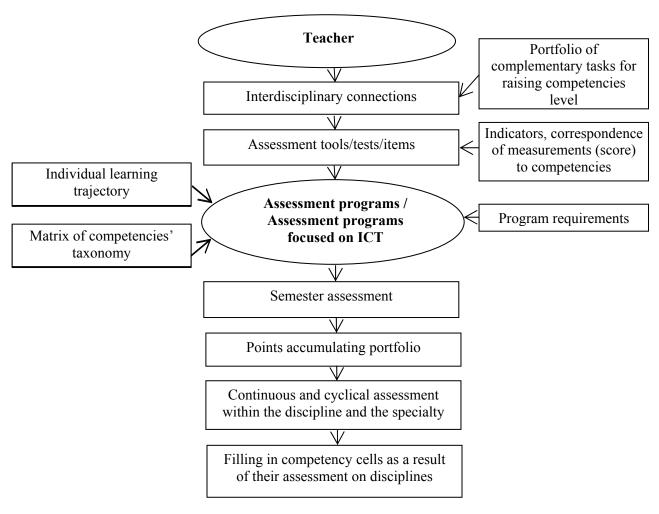


Fig.1. Competencies assessment system [5].

### Methodology of competencies assessment in the university framework

Methodology of competencies assessment as an integral part of academic results' assessment system focuses on the following indicators:

- amount and depth of knowledge of the matter studied by students;
- ability to apply knowledge in different situations (known, problematized);
- ability to integrate knowledge and skills in different situations (more complex, non-standard).

Within each indicator we identify four levels:

- level zero corresponds to grades 1-4 (less than 55 points);
- level one corresponds to grades 5-6 (55-65 points);
- *level two* corresponds to grades 7-8 (66-75 points);
- level three corresponds to grades 9-10 (76-100 points).

Each level corresponds to a letter: level three  $-\mathbf{A}$ , level two  $-\mathbf{B}$ , level one  $-\mathbf{C}$ , level zero  $-\mathbf{F}$ .

Further we present the criteria of competencies assessment in order to determine the students' ranking in the process of studying an academic discipline. If all criteria are in compliance with level three - then the student obtains the maximum ranking. If all criteria correspond to the level one - then the student's ranking is minimal.

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Indicators, levels of assessing learning outcomes within an academic discipline

| Nr.  | Indicators   | Levels  |   |  |  |  |  |
|------|--|---|---|--|--|--|--|
| crt. | indicators   | 0   | 1   | 2  | 3  |  |  |
| 1.   | Amount and depth<br>of knowledge and<br>understanding the<br>matter studied.   | Not able to argue/<br>explain/ describe                       | Simple argumentation, explanation, description  | Advanced argumentation, explanation, description   | Argumentation,<br>explanation, des-<br>cription focused on<br>general regularities<br>and transdisciplinary<br>knowledge                               |  |  |
| 2.   | Ability to apply knowledge in different situations/ ability to operate with knowledge entities   | Can not accomplish elementary tasks and operations            | Accomplishes<br>simple tasks and<br>applies some<br>knowledge in<br>simple/familiar<br>situations   | Accomplishes all assigned tasks, applies knowledge in familiar situations and also in those with problems. Can explain and illustrate his/her activities | Accomplishes tasks proposed in a creative way; applies knowledge to complex situations that require integration knowledge and transdisciplinary skills |  |  |
| 3.   | Ability to integrate knowledge and skills in different situations: complex, non-standard (related, firstly, to the professional profile) | Can not perform integration activities (integration products) | Accomplishes integration activities, learning products at a simplistic level, without argumentation | Accomplishes integration activities, learning products, which are logically structured, supported by arguments, applying transdisciplinary knowledge     | Accomplishes integration activities, learning products at a creative level, focusing on research and transdisciplinary skills                          |  |  |
|      | Appreciation Appreciation in ranking points  | 1-4<br>55 points  | 5-6<br>56-65 points   | 7-8<br>66-75 points  | 9-10<br>76-100 points  |  |  |
|      | Appreciation by letter   | F   | С   | В  | A  |  |  |

Putting into operation these indicators is a very complicated process which is difficult to achieve by a single teacher. Therefore, it is necessary to involve in this process structures/ departments having as responsibility conceptualization and monitoring the assessment of students' academic results. Hence, two approaches can be promoted:

- 1) The concept proposed in the present article is redimensioning the traditional system of assessment in light of competencies assessment with corresponding modifications of the whole toolset according to one or another concept in the given case.
- 2) The elaboration of special programs for competencies assessment based on information/ communications technologies.

Competencies are formed in stages and gradually, thus, their training level can be measured from how the disciplines from the Educational curriculum are studied. In the formation of a particular competency different disciplines have different impacts: one or more subjects can be the basic/dominant and others - complementary.

In this regard, there is developed the matrix of competencies within which are established connections between different competencies and other elements of study program, that are involved in the training and assessment process, first of all, it refers to academic subjects, internships, and research traineeships.

Elaborating the matrix of competencies, it is necessary to take into account the following:

1. The structure of competencies, which consists of overall outcomes from the disciplines' curriculum and those typical for the specialty (professional profile) and the National Qualifications Framework for the given specialty.

Nr. Categories of competencies specific

Units of competencies specific for a

- 2. The standardized taxonomy of competencies which has a dual function:
- guides the design of academic disciplines' outcomes within the study program;
- guides the design of toolset for assessing competencies trained within the study of academic disciplines (competencies taxonomy, see Table 3).

Competencies taxonomy [6]

Table 3

| 111.  | Categories of competencies specific                            |  |  |  |  |  |  |  |  |
|---|--|--|--|--|--|--|--|--|--|
| crt.  | for an academic discipline                                     | study unit/ operational concepts   |  |  |  |  |  |  |  |
|   | Domain: kr   | nowledge and comprehension   |  |  |  |  |  |  |  |
| 1.  | Reception and interiorization                                  | <ul> <li>Identifying notions, phenomena, processes, relationships;</li> <li>defining certain concepts;</li> <li>observing phenomena;</li> <li>enumerating facts, phenomena, processes, etc.;</li> <li>reproducing definitions, texts, etc.;</li> <li>collecting data, information, etc.;</li> <li>describing facts, phenomena, processes, etc.;</li> <li>highlighting facts, phenomena, processes, etc.</li> </ul> |  |  |  |  |  |  |  |
| Domain: Application-operation with knowledge entities |  |  |  |  |  |  |  |  |  |
| 2.  | Capacity: Primary processing of data/information, observations | <ul> <li>Analysis and synthesis;</li> <li>comparison and contrasting;</li> <li>establishing relationships;</li> <li>categorization and classification;</li> <li>induction, deduction;</li> <li>investigation;</li> <li>exploration;</li> <li>experimentation;</li> <li>resolving simple examples.</li> </ul>   |  |  |  |  |  |  |  |
| 3.  | Capacity: modeling and algorithmization                        | <ul> <li>building schemes, patterns;</li> <li>applying schemes, models algorithms;</li> <li>solving problems through modeling and algorithmization;</li> <li>anticipation of results;</li> <li>representation of data;</li> <li>structuring;</li> <li>modeling;</li> <li>transposition.</li> </ul>   |  |  |  |  |  |  |  |
| 4.  | Capacity: Expression and argumentation                         | <ul> <li>description of processes, phenomena and systems;</li> <li>generating ideas, concepts, solutions;</li> <li>argumentation of some statements;</li> <li>demonstration;</li> <li>interpretation;</li> <li>illustration;</li> <li>narration;</li> <li>explanation.</li> </ul>  |  |  |  |  |  |  |  |
| 5.  | Capacity: secondary processing of results, data, observations  | <ul> <li>drawing conclusions;</li> <li>evaluating results;</li> <li>systemic analysis of data, phenomena, processes;</li> <li>developing strategies;</li> <li>linking between different kinds of representations;</li> <li>generation of new ideas;</li> <li>extrapolation;</li> <li>extension;</li> <li>abstractization;</li> <li>appreciation;</li> <li>realization.</li> </ul>                                  |  |  |  |  |  |  |  |

|    | Domain: integration and transfer |   |  |  |  |  |  |
|----|----------------------------------|---|--|--|--|--|--|
|    |                                  | • generalization and customization;                             |  |  |  |  |  |
|    |                                  | • optimization;   |  |  |  |  |  |
|    |                                  | • transposition;  |  |  |  |  |  |
|    |                                  | • transferring;   |  |  |  |  |  |
|    |                                  | <ul> <li>adaptation and adequacy to contexts;</li> </ul>        |  |  |  |  |  |
| 6. | Capacity: Integration            | • planning / design;  |  |  |  |  |  |
| 0. | Capacity. Integration            | • managing;   |  |  |  |  |  |
|    |                                  | • individual and group research;                                |  |  |  |  |  |
|    |                                  | • conceptualization;  |  |  |  |  |  |
|    |                                  | <ul> <li>resolving case studies, problem situations;</li> </ul> |  |  |  |  |  |
|    |                                  | <ul><li>decision-making;</li></ul>                              |  |  |  |  |  |
|    |                                  | • efficient communication.                                      |  |  |  |  |  |

## Specificity of applying taxonomy in the design of competencies on academic disciplines

Development of competencies in the disciplines is achieved from three perspectives (focusing on three sources):

• The first source deals with the general/transversal, professional competencies from the National **Qualifications** Framework.

In this sense, the competencies specific to academic disciplines represent constituents/units of competencies, which through their entirety with other units of competencies in disciplines lead to the final competences training.

• The second perspective deals with the dominant competency or competencies specific to the given discipline, determined by the substance and training valences of the academic discipline. For example, the discipline "Educational Counseling" through its valences and opportunities has as its dominant - competency in educational counseling. The discipline "Didactic Communication" has as its dominant competency of didactic communication, and the discipline "General Pedagogy" has as its dominant competencies the following: training competency, developing competency, assessment competency, communication competency, etc.

In this regard, some academic disciplines have greater significance in professional competencies training (for example, training theory) and others have lower significance (for example, educational counseling), (specialty, teacher of subject).

• A third perspective, deals with the development of specific competencies related to the discipline in relation to competencies taxonomy.

In this context, three approaches can be applied:

- 1) the dominant competence for the given discipline is formulated (for example, didactic communication/ educational counseling) and the competency units related to competency categories and operational concepts from the competencies taxonomy.
- 2) there are formulated competencies according to categories and competency area: knowledge-comprehension; application-operation; integration-transfer.

In this case, the competencies will be formulated at levels: level of reception and interiorization, initial data processing, modeling and algorithmization, argumentation, secondary data processing and transfer (5-6 competencies).

3) there are formulated competencies integrated in dominant actions/activities specific to the given discipline.

Usually these competencies are related to level/integration field of competencies taxonomy. For example, the discipline "Curriculum Management" has as its dominant activities and, hence, competencies of diagnosing, conceptualization, designing, implementation, monitoring, realization of inverse connection.

In the framework of this methodology, it is important to efficiently use the benchmarks and priority toolset, to formulate clearly the competency and competencies units, constituents of general competence, at the higher manifestation level.

Thus, in competency matrix the columns correlate/correspond to competencies, and rows - to academic disciplines and internships. In the cells at the intersection between columns and rows should be placed significance indicators of academic disciplines and internships  $-\mathbf{K}_{d}$ : 1 – the discipline is not significant in forming the given competency; 2 – less significant; 3 – significant; 4 – the most significant (see Table 4).

# General competencies matrix on disciplines

| Nr.<br>crt. | Competencies<br>Disciplines | $C_1$ | $\begin{array}{c} Significance \\ K_d \end{array}$ | C <sub>2</sub> | Significance K <sub>d</sub> | C <sub>3</sub> | Significance K <sub>d</sub> | C <sub>4</sub> | Significance $K_d$ |
|-------------|-----------------------------|-------|--|----------------|-----------------------------|----------------|-----------------------------|----------------|--------------------|
| 1.          | Discipline 1                | ×     | 3  | ×              | 3                           |                | 1                           | ×              | 3                  |
| 2.          | Discipline 2                | ×     | 3  |                | 2                           | ×              | 3                           | ×              | 3                  |
| 3.          | Discipline 3                | ×     | 3  |                | 2                           | ×              | 3                           | ×              | 3                  |
| 4.          |                             |       |  |                |                             |                |                             |                |                    |

Thus, to assess students' competencies  $O_{(st)}$  the following descriptors are proposed:

- significant descriptor (discipline share) for each discipline in forming the competency  $-\mathbf{K}_{\mathbf{d}}$ ;
- significance for each assessement activity related to the level at which this activity can assess the corresponding competency  $\mathbf{K}_{dm}$ ;
- assessement-ranking of discipline's outcomes, concrete student's assessment in an assessment period for a given subject  $-\mathbf{O}_{dm}$ ;

For each student the amount is calculated by the formula:

$$\mathbf{O}_{(st)} = \mathbf{K}_d \cdot \mathbf{K}_{dm} \cdot \mathbf{O}_{dm}$$

Level of competencies' training for a student  $-N_{(st)}$  is established as the following relationship:

$$\mathbf{N}_{(st)} = \left( \mathbf{O}_{(st)} \cdot \mathbf{D}_1 + \mathbf{O}_{(st)} \cdot \mathbf{D}_2 + \mathbf{O}_{(st)} \cdot \mathbf{D}_3 + \dots + \mathbf{O}_{(st)} \cdot \mathbf{D}_n \right) / n,$$

where  $O_{(st)} \cdot D_1$  is the student's assessment within the discipline studied, and n - the number of disciplines studied in a given period.

While assessing competencies various forms and strategies/tools can be applied. The application of one assessment toolbox or another depends on the assessment stage - during the competency's training or at the end of it, on the type and significance of the discipline in training the given competency; on the assessment purpose: assessment at the level of knowledge, at the level of implementation or integration.

Taking into account the practice and opportunities for application of different competencies assessment tools, there can be recommended various schemes/combination of assessment methods related to one or more competencies (group of competencies).

Table 5 Forms and methods of competencies assessment in relation to level and types of competencies

| Level of competencies manifestation |   |  |  |  |  |  |  |  |
|-------------------------------------|---|--|--|--|--|--|--|--|
| Knowledge-comprehension             | Application-operation                     | Integration-transfer                       |  |  |  |  |  |  |
| 1. Testing                          | 1. Seminar                                | 1. Project                                 |  |  |  |  |  |  |
| 2. Questionnaire                    | 2. Report                                 | 2. Bachelor thesis, Master's degree thesis |  |  |  |  |  |  |
| 3. Colloquium                       | 3. Testing                                | 3. Case study                              |  |  |  |  |  |  |
| 4. Queezes                          | 4. Case study                             | 4. Professional situations modeling        |  |  |  |  |  |  |
| 5. Seminar                          | 5. Individual work with research elements | 5. Internships                             |  |  |  |  |  |  |
| 6.                                  | 6. Exercise                               | 6. Scientific conferences                  |  |  |  |  |  |  |
|                                     | 7. Problem-solving situations             | 7  |  |  |  |  |  |  |
|                                     | 8   |  |  |  |  |  |  |  |

Table 6

### Methods of assessing students' competencies during the study of academic disciplines

Student's Name

| Nr.  | Levels/indicators |        | Indicators/dimensions       |                           |                                      |                  |  |  |
|------|-------------------|--------|-----------------------------|---------------------------|--------------------------------------|------------------|--|--|
| crt. | Study units       | Levels | knowledge and comprehension | application-<br>operation | integration<br>(transfer) creativity | Average<br>score |  |  |
|      | Study unit 1      | 0      |                             |                           |                                      |                  |  |  |
| 1    |                   | 1      | 58 points                   | 58 points                 | 56 points                            | 57 points        |  |  |
| 1.   |                   | 2      | -                           |                           |                                      |                  |  |  |
|      |                   | 3      |                             |                           |                                      |                  |  |  |

Table 7

|    | Total/average score |   | 56 points | 60 points | 58 points | 57 points |
|----|---------------------|---|-----------|-----------|-----------|-----------|
|    | •••                 |   |           |           |           |           |
|    |                     | 3 |           |           |           |           |
| 3. | Study unit 3        | 2 |           |           |           |           |
| 3. |                     | 1 |           | 57 points | 55 points | 51 points |
|    | Study unit 2        | 0 | 43 points |           |           |           |
|    |                     | 3 |           |           |           |           |
| ۷. |                     | 2 | 67 points | 66 points |           |           |
| 2. |                     | 1 |           |           | 64 points | 65 points |
|    |                     | 0 |           |           |           |           |

Suggestions regarding filling-in the given table and interpreting the results of each student separately are the following:

- 1. In studying each content unit there are assessed the competency units (constituents of competencies) to each student.
  - 2. Assessment methods can be different:
- during the study of content unit the assessments can be made on the following dimensions: knowledge and comprehension, application-operation, using different methods: test, questionnaire;
- upon completion of studying the content unity, as a rule, assessments are carried out on the dimension of "integration" (transfer/creativity), the methods applied are: case study, problem-solving situations, reports, micro-research, etc.
- 3. In accordance with each indicator/dimension the student can obtain from 0 to 100 points, and the results can be placed/distributed in three levels.
- 4. The average score of final results for each learning unit are gathered, and the average data of learning outcomes for the discipline is calculated, and it represents namely the manifesting appreciation of competencies specific for the given discipline. At the same time, this average score represents the criterion for assessing transversal, transdisciplinary competencies, taking into consideration the training significance of each discipline separately.
- 5. In this case, according to the results scored in the table, the student has obtained average of 57 points, studying all learning units, and is placed in the category of students with training level 1 or has minimal ranking.

Methods of assessing students' competencies at transdisciplinary level

Student's Name

|             | Levels/indicators,            |                           | Indicators/dimensions       |                           |   |                  |  |  |
|-------------|-------------------------------|---------------------------|-----------------------------|---------------------------|---|------------------|--|--|
| Nr.<br>crt. | Significance Study discipline | Discipline's significance | knowledge and comprehension | application-<br>operation | integration/<br>transfer/<br>creativity | Average<br>score |  |  |
| 1.          | Teaching Theory               | 4                         | 56 points                   | 60 points                 | 58 points                               | 58 points        |  |  |
| 2.          | Education Theory              | 4                         | 58 points                   | 62 points                 | 58 points                               | 59 points        |  |  |
| 3.          | Educational Counseling        | 3                         | 60 points                   | 64 points                 | 62 points                               | 62 points        |  |  |
| 4.          | Educational Policies          | 2                         | 68 points                   | 66 points                 | 64 points                               | 66 points        |  |  |
| 5.          | Sociology                     | 1                         | 71 points                   | 70 points                 | 69 points                               | 70 points        |  |  |
|             | Dimension average score       |                           | 62 points                   | 64 points                 | 62 points                               | 63 points        |  |  |

Suggestions regarding filling-in the given table and interpreting the results of each student separately are the following:

- 1. The table is filled-in basing on the final assessment results on disciplines.
- 2. The average scores of final results on disciplines are added-up applying the corresponding formula.
- 3. The total result obtained by applying the above-mentioned formula represents namely the real level of transdisciplinary competencies developed in the framework of professional training program. In the given case the student with 63 points gets minimal ranking.

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#### **Conclusions**

The systemic approach in order to build a paradigm of competencies assessment in higher education creates opportunities to assess the level of students competencies in the process of learning act.

Valences of this approach fall within the following set of requirements:

- Competencies assessment correlates with the stages and degree of competencies manifestation and focuses on accumulation of points during the training and competencies assessment.
- Competencies assessment focuses on three interconnected aspects: competencies assessment/competencies constituents within the learning units and academic disciplines, competencies assessment in its integrity at the end of studying the academic discipline and assessment of transversal/transdisciplinary competencies specific to the specialty or a given professional profile.
- The development and implementation of methodology and a toolset for students competencies assessment imply an additional effort from teachers and special training in this regard. Without involvement of assessment specialists, scientific researchers and metodologists, it will be complicated to implement a system of competencies assessment in higher education.

The proposed system does not claim an exhaustive approach and needs development and improvement. At the same time, this system opens real prospects to promote a new approach to the assessment of academic results.

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