



## ПЕДАГОГИКА И ДИДАКТИКА ИНФОРМАТИЗАЦИИ PEDAGOGY AND DIDACTICS IN INFORMATIZATION

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### Constatation of the teachers' competence areas in general education

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**Abstract.** *Problem statement.* The article presents experimental data on the teachers' competence areas. *Methodology.* The investigative approach of the continuous professional training was based on a complex, applied research strategy that combines both quantitative and qualitative methods of investigation. *Results.* The conducted analysis identified teachers' competence areas in continuous professional training such as relational competence, teaching-learning competence, managerial competence, design and planning competence, specialized cognitive competence, and evaluation and monitoring competence. The article presents experimental data of the pedagogical experiment conducted with 888 subjects divided into two samples: the training sample (441 subjects) and the control sample (447 subjects). *Conclusion.* The framework for assessing teachers' competence areas served as a basis for identifying teachers' competence areas, which contains the following components: evaluation criteria, performance levels, performance indicators, degree of evaluation and descriptors.

**Keywords:** competence, competence areas, experimental sample, descriptors, teachers

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### Определение сфер компетенции учителей общего образования

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**Аннотация.** *Постановка проблемы.* Представлены экспериментальные данные по областям компетенции учителей. *Методология.* Исследовательский подход к непрерывному профессиональному обучению основан на комплексной прикладной исследо-

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вательской стратегии, сочетающей как количественные, так и качественные методы исследования. *Результаты.* Анализ позволил определить области компетенции учителей в непрерывном профессиональном обучении: реляционная компетенция, преподавательско-учебная компетенция, управленческая компетенция, компетенция в области проектирования и планирования, специализированная когнитивная компетенция, компетенция в области оценки и мониторинга. Приведены экспериментальные данные на этапе поиска педагогического эксперимента, в котором участвовало 888 человек, разделенных на две выборки: обучающая (441 человек) и контрольная (447 человек). *Заключение.* Предложенная система оценки, послужившая основой для определения областей компетенции учителей, содержит следующие компоненты: критерии оценки, уровни успеваемости, показатели успеха, степень оценки и дескрипторы.

**Ключевые слова:** компетенция, области компетенции, экспериментальная выборка, дескрипторы, учителя

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**Problem statement.** The problematics of the evolution of the competence concept is treated by several authors at the international level [1–9] and at the national level [10–20].

The concept of *competence* is the subject of several approaches which depend on the field it evokes. Thus, we can synthesize a definition of competence: competence is the result of the complete processing of a situation, conducted by a person or a group of people in a given context [2]. Competence is the result of a dynamic process, is specific to a situation and can be adapted to other situations. Ph. Jonnaert mentions that a competence is defined by: a *context*; a *person* or a *group of people*; a *situational framework*: a situation and its situations family; a *sphere of experiences* previously lived by a person or a group of people; an *action framework*: categories of actions including a number of actions performed by one or more people in this situation; a *resource framework*: resources used to develop competence; an *evaluation framework*: results obtained, transformations observed in the given situation and in people under concern; and criteria that allow to state that the processing of the situation is complete, successful and socially acceptable [2].

M.-D. Bocoş, R. Răduţ-Taciu, C. Stan, O. Chiş and D.-C. Andronache [21] consider competence as an individual or collective characteristics to select, mobilize, combine efficiently, in a given context, an integrated set of knowledge, skills and attitudes.

Analyzing the psycho-pedagogical competence, C. Oprea emphasizes that the future teacher must have other competencies, such as: energizing competence (the ability to make students want to get involved in the activity), empathic, ludic competence (the ability to respond to students' play by game), organizational, interrelational competences; all having the possibility to (self) form and (self) develop at the system level [22].

The European Center for the Development of Vocational Training (French-language school boards in collaboration with the French-language education policies and programs branch of the Ontario Ministry of Education, 2014) associates the English term *skill* with professional abilities and capacities, and defines it as having the ability to perform tasks and solve problems. On the other hand, the term *competence* is defined as an ability to implement learning outcomes in an appropriate manner in a defined context (education, activity, professional development, personal development).

**Methodology.** Methods and tools used in the pedagogical experiment: the investigative approach of the continuous professional training was based on a complex, applied research strategy that combines both quantitative and qualitative methods of investigation.

*Documentary analysis.* The analysis of the documents had the following objectives: collection of the information regarding continuous professional training in the Republic of Moldova; ordering the obtained information and compiling a database; the analysis of the data regarding the continuous professional training and the formulation of some research hypotheses.

*Questionnaire survey.* The main information requested through the teachers'/managers' questionnaire concerned the following aspects:

- teacher training needs regarding the development of competence areas;
- sources of information on teachers' competencies development;
- the impact of continuous professional training on teachers' competencies development;
- teachers' recommendations on the improvement of the continuous professional training process and of the competencies developed within the continuous professional training, etc.

**Results and discussion.** The pedagogical experiment was conducted within 2019–2020 period: training sample in 2019–2020 (441 subjects), the control/validation experiment in 2019–2020 (447 subjects), a total of 888 people (teachers, school directors, instructive deputy directors, education deputy directors), during the mixed continuous professional training system: face to face, online and remotely. The selected groups' component is representative to our experiment objectives. The selected groups are quite inhomogeneous in terms of professional experience, teaching degree qualification, age, specialty, but the main criterion was that, absolutely all teachers have developed competencies to provide qualitative educational services.

The analysis of the theoretical studies allowed the establishment of the following main areas of teachers' competencies, identifying themselves via the following competencies<sup>1</sup>:

- *managerial competence*: planning, organizing, implementing and monitoring educational and normative policy documents;

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<sup>1</sup> French-language School Boards in Collaboration with the French-language Education Policy and Programs Branch of the Ontario Ministry of Education. Digital Pedagogy in Action. Foundation Paper for Ontario's French-Language Schools and School Boards and Digital Pedagogy in Action. Review of Writings and Virtual Interviews. 2014. Available from: <https://pedagogienumeriqueenaction.cforp.ca> (accessed: 07.09.2021).

- *relational competence*: developing the fairness-based constructive relationships;
- *teaching-learning competence*: capitalizing on curricular, extracurricular and out-of-school learning opportunities;
- *design and planning competence*: formulation of learning objectives for the subject taught and for the extracurricular and out-of-school activities;
- *specialized cognitive competence*: curriculum design, planning and implementation within the educational process;
- *evaluation and monitoring competence*: establishing the specific evaluation criteria used within the taught discipline/planned activities and their implementation in the educational process.

Each area of competence contains a number of performance descriptors, presented via affirmative statements needed to be achieved in case of a good professional activity. Quality indicators can help us assess the extent to which teachers and school directors meet the school goals through the competencies they possess.

***Basic descriptors of teacher competencies (Ds):***

*The logic of the answer (Ds1)* aims at understanding, penetrating the meaning; at the ability to think and order the answers in a coherent form, of the phenomena, actions and activities which are required based on the formulated items. The exposure logic of some events indicates, in fact, the correlation of the actions that follow the experimental subjects in the professional activity, which contributes to a coherent activity and the achievement of the expected results.

*The meaning of the answer (Ds2)* refers to the semantic content of the proposed statements through the ability of experimental subjects to provide concrete meanings, valuable to the operated phenomena, activities and actions; of noticing the denotative meaning and the subsequent evolution of the targeted phenomena. The answer meaning denotes the teachers'/managers' professional training regarding their field of activity.

*The relevance of the answer (Ds3)* represents the significance, the importance of the expressed opinions, the highlighting of the possibilities to be implemented in the professional activity and their impact in the institutional and personal development of teachers. The relevance of the answer refers to the analysis, selection, structuring, organization, processing, synthesis and interpretation of the requested information.

*The depth of the answer (Ds4)* represents the ability to judge and understand things in essence, in their depth; it refers to the appreciation and issuance of the value judgments related to the topic under concern, the subjects' penetration in the problem essence and the need to decide in relation to this problem, action, etc. The depth of the answer aims at the things' thorough analysis which is necessary for the teachers'/managers' activity.

*The originality of the answer/ideas (Ds5)* as a descriptor, represents the ability to offer unique, new, special answers compared to other answers; the elaboration of other answers' variants than the proposed ones; the teacher's reflection on the existing facts and their direction towards obtaining professional performances.

Also, the Reference for the Assessment of Teachers' Competence Areas was developed (Table 1) and served as a basis for identifying teachers' competence

areas, focused on evaluation criteria, performance levels, performance indicators, evaluation degree and descriptors. Table 2 presents the synthesis of the two samples' pedagogical experiment results: the training sample and the control sample.

Table 1

Framework for assessing the teachers' competence areas

Evaluation criteria	Performance levels	Performance indicators	Evaluation degree, %	Descriptors
1. Ability to develop fairness-based constructive relationships with colleagues.  2. Ability to capitalize on curricular, extracurricular and out-of-school learning opportunities in the educational process.  3. Ability to plan, organize, implement and monitor educational and normative policy documents in the educational institution.	<i>Excellent (I)</i>	Excellent: – the subjects present excellent answers, with logical and relevant arguments for the educational institution, in relation to the formulated items; – subjects present at the international and national level the level of their involvement in various professional activities/projects; – the subjects demonstrate the implementation of the educational and normative policy documents focused on the legislative framework improvement, with the perspective of developing and implementing practices promoted within the institution	100–90	1. The logic of the answer.  2. The meaning of the answer.  3. The relevance of the answer.  4. The depth of the answer.  5. The originality of the answer/ ideas
4. Ability to formulate learning objectives for the subject taught, and for the extracurricular and out-of-school activities.  5. Ability to design, plan and implement the curriculum in the educational process.	<i>Very well (II)</i>	Strong points: – the subjects present correct, logical, deep, original, relevant answers, they understand the meaning of the notions that need to be defined in relation to the formulated items; – subjects present evidence of answers through concrete examples from professional activity; – the subjects demonstrate the implementation of the required documents and present successful practices in the educational institution	89–70	
6. The ability to establish the specific evaluation criteria used in the taught discipline/planned activities and their implementation in the educational process	<i>Good (III)</i>	Aspects that could be improved: – the subjects present more difficult the correct, logical, deep, relevant answers, they present some gaps in the meaning of the notions that need to be defined in relation to the formulated items; – subjects present inaccurate evidence of answers through concrete examples from professional activity; – the subjects demonstrate with difficulty the implementation of the required documents and present successful practices in the educational institution	69–51	

Table 1, ending

Evaluation criteria	Performance levels	Performance indicators	Evaluation degree, %	Descriptors
	Weak (IV)	Weaknesses: – subjects present weak, irrelevant answers, without having a logic in formulating their answers, which hinders the answers' quality; – they are not so deep, original, they present some gaps in the meaning of the notions that need to be defined in relation to the formulated items; – the subjects partially present evidence of the answers through concrete examples from the professional activity, which constrains the general quality of the presented experiences; – the subjects demonstrate the implementation of the required documents and present successful practices in the educational institution with significant gaps	50–25	
	Unsatisfactory (V)	Major weaknesses: – the subjects present very weak answers, without having a logic in the formulation of the answers, the depth, originality and relevance of the answers are missing, they present significant gaps in relation to the formulated items; – the subjects do not present evidence of answers through concrete examples from professional activity; – the subjects insufficiently demonstrate the implementation of the requested documents and do not present successful practices in the educational institution; – the subjects refuse to respond to formulated items	Less than 25	

As a result of the *relational competence* experimental data analysis, we mention that the research samples are selected, per general, homogeneously and the identified level is framed at the same performance levels.

As a result of the *teaching-learning competence* data analysis, we mention that the research samples are selected, per general, homogeneously and the identified level is framed at the same levels of performance. According to the performance levels established in our research, there is *an insignificant difference* in the criterion of *analyzing the impact of provided feedback to students*; and of *guiding students how to improve their school performance* for training sample reached a good level – 51.47% (227 subjects), and for control sample is at the poor level – 50.33% (225 subjects).

As a result of the analysis of the data on *managerial competence*, we mention that the research samples are selected, per general, homogeneously and the level of identified level is framed at the same levels of performance.

As a result of the analysis of the data regarding *the design and planning competence*, we mention that the research samples are selected, per general, homogeneously and the identified level is framed at the same levels of performance.

As a result of the analysis of the data regarding *the specialized cognitive competence*, we mention that the research samples are selected, per general, homogeneously and the identified level is framed at the same levels of performance.

As a result of the analysis of the data regarding *the evaluation and monitoring competence*, we mention that the research samples are selected, per general, homogeneously and the identified level is framed at the same performance levels.

Table 2

The experiment results: training sample and control sample

Teachers' competencies	Training sample, 441 subjects, %	Control sample, 447 subjects, %
Relationship competence	68.02	58.16
Managerial competence	24.48	23.93
Teaching-learning competence	68.02	64.87
Design and planning competence	65.99	60.17
Specialized cognitive competence	68.03	60.62
Evaluation and monitoring competence	43.31	44.74

During the constative experiment, the subjects were asked what competencies they developed within the professional activities in the educational institution. Based on the answers' analysis, we conclude the following two samples' results: the training sample (TS) and the control sample (CS) for each competence (Table 2).

**Conclusion.** The implementation of specific directions of educational services in the context of standards of teachers' professional competencies highlighted the following aspects: out of the five priority areas of the educational system such as didactic design, learning environment, educational process, professional development and educational partnerships, the first three areas represent a landmark for the long-/short-term design of the classroom lessons' organization and development. The professional development aims at teacher's performance, and the field of educational partnerships aims at the collaboration of the institution and teachers with various partners (similar institutions, NGOs, local public administration, various educational centers, etc.). The standards' implementation in the educational process aims at the development of professional competencies, in connection with the educational system requirements at the national and international level. Also, based on the standards, the educational institutions efficiently organize the process of teachers' evaluation, of their professional development and career advancement. In this context, we mention the need to implement the activities of

training professional competence in order to increase the quality of the educational process, thus emphasizing the role of educational services and purposes in continuous professional training.

The concept of professional competence, which is fundamental in the formation of a teacher and in achieving school results in the educational system, is analyzed in pedagogical, andragogical, sociological and psychological research. Through this research, we conclude that the study is a fundamental landmark in the pedagogical capitalization of the continuous professional training of teacher competencies.

The advantages of the teachers' competence areas approach allow establishing relationships between concepts, phenomena, and principles; leading to a reconfiguration of the continuous professional training, namely teachers' continuous training, focused on areas of competence not only for school subjects or curricular areas.

Experimental data regarding the teachers' competencies approach cover the following areas of competence: relational competence, teaching-learning competence, managerial competence, design and planning competence, specialized cognitive competence, evaluation and monitoring competence. Thus, the process of continuous professional training must aim at teachers' continuous professional training which will derive from these competencies. Also, it should focus more on solving the problems occurring in the teacher training system and less on carrying it out based on school subjects or based on the field of teachers' initial professional training.

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