**ION CREANGA STATE PEDAGOGICAL UNIVERSITY,
CHISINAU, REPUBLIC OF MOLDOVA**

Manuscript code:
C.Z.U: 378.091 (043.2) 111

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**PEDAGOGIC CONDITIONS FOR FORMING PROFESSIONAL
COMPETENCES OF PRE-SERVICE TEACHERS THROUGH
INDEPENDENT ACTIVITY**

Specialty 531.01 – General Theory of Education

**SUMMARY of the
Doctoral Thesis in Education Sciences**

CHISINAU, 2022

The thesis was elaborated within the Doctoral School of 'Education Sciences', Ion Creanga State Pedagogical University, Chisinau, Republic of Moldova

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The thesis public defense is scheduled for 8 june, 2022, at 14.00
at Ion Creanga State Pedagogical University,
study block no.2, Senate Hall, 1, I. Creanga Street, MD-2069.

The doctoral thesis and the abstract are available on Ion Creanga State Pedagogical University website (www.upsc.md) and on ANACEC web page (www.cnaa.md).
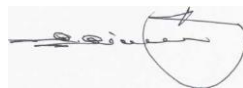The abstract was sent on 6 may, 2022

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List of abbreviations

In Romanian:

CPCD - competenţe profesionale ale cadrelor didactice

CPU   -   curriculum pedagogic universitar

CDU   - cadre didactice universitare

CP   - competenţe profesionale

AIS   -   activitate independentă a studenţilor

RPCD   -   referenţialul profesional al cadrelor didactice

SPN – Standarde de competenţă profesională ale cadrelor didactice din învăţământul general

UPSC – Universitatea Pedagogică de Stat „I. Creangă'

USARB - Universitatea de Stat Alecu Russo' din Bălţi

In English:

EG -experimental group

CG– control group

UPSC– Ion Creanga State Pedagogical University

USARB – Alecu Russo State University from Balti

TPC- teacher professional competences

CPD- continuous professional development

ITT – initial teacher training

CONCEPTUAL FRAMEWORK OF THE RESEARCH

The topicality of the research subject results from the complexity of the teacher training system, consisting of initial and continuous education which requires constant stimulus through self-formation [13, p. 35-36]. The initial professional training quality, determined by the excessive computerization of education in recent years (also marked by the pandemic crisis), constitutes a current desideratum of policy documents, which is explained by the "independent activity dynamics in the context of online education" [26, p. 19]. *The United Nations Convention on Higher Education* mentions „the need for international cooperation to increase the quality of education by promoting autonomous learning, a key strategic line for the development of teacher education" [26, p. 19]. This is further acknowledged in the European Higher Education Area through the indicators of the formation of students' pedagogic competences as generators for the increase of their professional culture level. In the provisions of the European Commission „the key competences are valued as a transferable and multifunctional package of knowledge, skills (abilities) and attitudes that individuals need for professional integration" [21, p.10-12]. *The Global Development Agenda* 2030, *The new Framework of the Education for Sustainable Development for 2020-2030*, UNESCO [43], the *Reference Framework for Professional Competences of Teachers in General Education* (2018), and *the Qualification Framework in Technical-Vocational Education and Higher Education Institutions* (2021) which stipulates that "in the process of learning skills formation, priority is given to individual learning", are policy documents containing standards, indicators and descriptors in conformity with autonomous learning requirements: „enhancing quality education for sustainable development by strengthening student learning opportunities" [47].

The normative framework of teachers' (pre-service teachers) training through independent activity, stipulated in the education policy documents (Education Code of the Republic of Moldova, 2014, Art. 81), highlights the need for forming highly qualified specialists in the field of education, who are „creative and independent in their professional activity", respectively, the concept note of the *National Development Strategy „Moldova 2030"* [47] mentions „the need to generate solutions for the future of educational domains and employment" and the *Regulation of teacher attestation in preschool, primary, secondary, special, complementary, vocational secondary and specialized secondary education* calls for „new models for the formation of teachers' professional skills aiming at generating learning autonomy".

Therefore, the *development of students' self-instruction skills* is a national priority of educational policies and educational praxis. From this point of view, „the mission of universities as providers of quality education, involves ensuring insertion, occupational mobility, and rapid adaptation to permanent changes in the labor market through self-formation skills" [2].

The relevance of researching teachers' professional training is connected with the objectives of the National Development Strategy in the Republic of Moldova 2030 [47] that points the expansion of professional competences from the integrated systems of knowledge, skills, and attitudes, interpreted as values, toward the autonomy of learning, which is formed in the process of initial professional training. "The development of pedagogic skills included in the teachers' reference framework must ensure the assertion of a constructivist learning style that will facilitate the socio-professional integration of newly graduates [46, pp. 5-9]. Autonomous learning also encompasses the formation of investigative skills, especially the development of a research culture defined as „a system of beliefs regarding research, reflected in the philosophical, metacognitive, heuristic, methodological, innovative, and ethical domains which unity ensures the integrity of an investigative style formation and the advancement of students' investigative potential" [10, pp. 4-6]. In fact, „self-directed learning is based on responsibility, professional independence and personal curiosity" [23, p. 46].

Description of the research domain and identification of the research problem. Internationally, the historical context of the emergence, research, and development of the term *independent activity* is foreshadowed by the „transformations that determine the qualitative reformation of the traditional approaches to initial teacher training" [23, p. 14]. The first theoretical syntheses that formed the basis of research in the field of self-instruction refer to the 1990s, with studies on the issue of self-directed learning signed by Ph. Carré, A.N. Tremblay, D.W. Mocker, F.J.Varella, A.N. Tremblay si P.J. Theil, P. Candy, A. Moisan şi G. LeMeur, R. Foucher, J. Kuhl, L.Corno, M. Vygotsky, H. Siebert, W. Mader, A. Anderson, P. R. Pintrich, R. Ellis, A. Narcy, V. Negovan [25]. Relevant are the studies that led to the clarification of the key terms used in the research: A. Bandura [49] through the operational concepts (independent activity, individual study, self-directed learning, autonomous learning, self-instruction, etc.), Zimmerman BJ, Schunk DH [58] (self-regulated learning, self-instruction, etc.), Woolfolk H., Siebert H., Oates S. [54] (self-regulated learning); Giuseffi F. [52] and Loeng S. [53] (self-directed

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learning); Aljafari R. [48], Beale J. [50], Ponton M. [55], Tusheva V. [57], Roberson Jr., DN, Zach, S., Choresh N., Rosenthal I. [56] (self-directed learning), Ngamaleu NR [59] (autonomous learning), and others.

The Anglo-Saxon literature on the issue of independent activity advances multiple interpretations of the concept of *self-instruction* [22]*: self-education, self-learning, self-directed learning, self-regulated learning, self-differentiation, self-discovery, self-efficacy, self-control, self-examination, self-management, self-leadership*, etc. (Joiţa E.) [19, p.128].

In the psychological and pedagogic literature, the interest regarding the self-instruction theoretical and practical issues is expressed in studies that evoke theoretical conceptualization and scientific foundation of specific strategies. **In Romania, *self-instruction is discussed by representative authors in the field of pedagogy***: A. Barna (self-eduation, 1995), N. Vinţanu (investigative competence, 2002), V. Negovan (individual study, 2004) [25], Ardelean A. [1], Neagu (Niţă) (2011) [24]; Mândruţ O. (2012) [21], Cristea S. (2015); Ciauşu P. (2015) [6], I. Neacşu (2006, 2015, self-instruction competence) [23]; Bocoş M. [2]; Raduţ T., Stan C., Chiş O. (2016) [57]; El. Joiţa (2007, educational paradigms) [19], Dragu N. (2015) [14], C. Tulbure (2009, independent learning competence) and independent learning activity (A. Glava, 2009 [17]; M. Dobrea, 2010, 2014, M. Secu (Ştefan), 2011, 2014 [35]; E. IIdico Câmpean, 2011, M. Stăncescu, 2011, M. Catalano, 2014; Ţâmpău C. (2018) [39] etc.

In recent years, ***there is an increased awareness of Moldovan researchers*** regarding teacher professionalization: I. Negură, Papuc, Vl. Pâslaru (2000), A. Zbârnea (2007) have researched the peculiarities of independent activity: N. Bucun (2014); Guţu Vl., Bîrnaz, O. Dandara (2015); N. Garştea (2009); Callo T. (2010), (2020); Cojocaru V. (2018); Cojocaru V. Gh., (2016), Patraşcu Dm. (2019); L. Focşa-Semionov (2009) [16]; Bolboceanu A., Vrabii V. (2018) [3]; O. Chirchina, 2012; Z. Ghilan, 2010; O. Vovnenciuc, 2013 [41]; O. Dandara, 2013 [13]; A. Gremalsci (2015); D. Pascaru, 2016 [29]; N. Silistraru, S. Golubiţchi (2013); L. Schiopu (2016); V. Cabac (2017); Şova T. [42]; V. Goraş-Postică (2013); V.Oboroceanu, 2018 [26]; Afanas Al. (2020); L. Laşcu, V. Botnari, 2019, 2020 [20]; V. Reaboi-Petrachi, 2020 [33], Vl. Pâslaru (2021) [30], L. Pogolşa, A. Afanas, N. Vicol (2018); N. Vicol, L. Pogolşa (2020); L. Parhomenco (2020), etc.

Pedagogic and psychological research on *students' self-instruction competence* demonstrate the open nature of its denotation: „*the competence to design self-instruction strategies (personalized self-instruction strategies) and their implementation*" (I.Mihai-Stăncescu)[22, p.17], „*self-learning competence involves self-directed learning*" (Dandara O.) [13, p.22]; „**students' self-directed learning refers to their independent activity in a university context**" [16, p.113]; „independent activity involves learning autonomy, self-designed learning activities" [60, pp.38-41], „implementation of the designed project" [61, p.189], „monitoring the self-development process by employing reflective and self-assessment (metacognition) skills)" [61, p. 189], and the „ability to self-regulate one's own learning" [15]. Generated by cultural, socio-political and socio-professional mobility in the contemporary society, the return to self-instruction practices is appreciated as personalized self-instruction, and, implicitly, education for (self) education [20, pp.5-6]; [34, p.6]; [35, p.112]; [36, p.253]. The tendency of continuous reform of higher education in the Republic of Moldova is oriented towards „the formation of generic competences that imply students' responsibility for the organization and evaluation of their professional development, active participation in their own training. In this context, it is clear that students need methodological support to develop their independent learning skills and create professional development opportunities" [7]. From this point of view, „*a supporting learning environment that would allow students to gradually develop self-directed and cognitive self-management skills*" is an essential condition [14], [16], [10], [16] etc.

The formation of students' professional skills for independent study activity is a relevant issue in the context of university education as a premise for optimal professional development and successful social integration. A contradiction emerges between students' modest abilities regarding the implementation of independent learning strategies and the current conditions for the design, project implementation, and independent learning self-assessment and self-regulation. The system of ideas on autonomous learning in universities, the realities of the higher education concerning the design and the effective accomplishment of the independent activity, the difficulties faced by university teachers in organizing the independent activity, determined the formulation of the **research problem:** *What pedagogic conditions can be created in higher education to stimulate students' independent study activity*

and what could be the constituent elements of the Technology of pre-service teachers' professional training through independent activity? The formation of autonomous learning skills during initial teacher education remains an issue which is insufficiently addressed.

The purpose of the investigation consists in the elaboration, theoretical substantiation and experimental capitalization of the pedagogic conditions for forming professional competences of pre-service teachers through independent activity.

Research objectives aim at:

1. determining the theoretical and methodological foundations of pre-service teachers' professional training from the perspective of autonomous learning;
2. clarifying the denotations of the operational concepts used in the research: professional competences, independent activity, autonomous learning, self-instruction competence, independent learning skills, etc.;
3. explaining the autonomous learning motivation and the degree of pre-service teachers' readiness for the independent activity in the university environment;
4. describing the factors that lead to the development of pre-service teachers' independent learning skills;
5. conceptualizing and describing the pedagogic conditions for forming professional competences of pre-service teachers through independent activity.

Research hypothesis: initial teacher training through independent activity can be optimized by establishing theoretical and methodological guidelines concerning autonomous learning. This is necessary for clarifying the denotation of the research operational concepts (professional skills, independent activity, autonomous learning, self-instruction competence), which would allow the experimental studying of pre-service teachers' readiness for independent activity in the university environment, establishing the basis for the interpretation of students' motivation for autonomous learning. Such would in turn facilitate the identification of important pedagogic conditions for forming professional competences of pre-service teachers through independent activity.

Synthesis and justification of scientific research methodology refer to the design and implementation of the following research methods: scientific

documentation, chronological method, analysis of the autonomous learning and self-instruction phenomena, and the explorative method used for scientific observations of students' independent activity. In the case of pedagogic experiment, the following instruments were used: questioning and testing, mathematical data calculation methods, quantitative and qualitative analysis of the results.

Main scientific results of the research:

- establishing the theoretical foundations regarding the initial professional training from the perspective of autonomous learning and unveiling the denotations of the operational concepts used in the research: *professional competences, independent activity skills, autonomous learning, self-instruction competence*, etc. [67, pp. 62-65], [66, p.14];
- elucidating the factors of pre-service teachers' independent learning skills development and the peculiarities of their professional training through independent activity in the university environment [64, pp.17-19];
- synthesizing the independent learning indicators and values, and the assessment criteria for the degree of students' independent learning skills formation [65, pp.51-59];
- clarifying the mechanisms for developing students' independent learning skills [65, pp.58];
- scientific substantiation and capitalization of university pedagogic conditions for forming students' professional competences through independent activity [68, pp.274-290];
- scientific-practical conclusions regarding students' independent activity that contributed to the development of the general theory of education and higher education pedagogy.

Implementation of scientific results has been achieved by the experimental validation of the pedagogic conditions for forming the professional competences of pre-service teachers (master's students) through independent activity at the department of Education Sciences and Management, Ion Creanga State Pedagogical University, and at the department of Education Sciences, Alecu Russo State University from Balti.

Publications on the research topic: 7 scientific papers [62], [63], [64], [65], [66], [67], [68].

Thesis volume and structure: introduction, three chapters, general conclusions and recommendations, bibliography from 160 sources, 7 annexes, 120 pages of basic text, 14 tables, and 13 figures.

Key concepts: independent activity, independent study activity, autonomous learning, initial teacher training, pre-service teachers, professional skills, individual study, self-instruction competence, independent learning skills, socio-professional self-efficacy.

THESIS CONTENT

The **Introduction** describes the topicality of research on autonomous learning and the importance of investigating the university opportunities for pre-service teachers' professional training through independent study; the research problem, the purpose and the objectives of the research are formulated, introducing the main research results that demonstrate the novelty and originality, theoretical significance, and the praxiological value of the research.

Chapter 1 „Theoretical foundations of students' professional training from the perspective of autonomous learning" presents conceptual delimitations on teacher training through autonomous learning; describes approaches to the evolution of teachers' professional competences (TPC), and elucidates the issue of motivation for autonomous learning. In this context, there is a distinction between „continuous learning and innovative learning, a fact that may indicate possible paths for the future of education" [1, p. 26-71]. *Innovative learning* challenges the core values, goals, and objectives of any system. From guided learning, students move to independent activity which epitomizes a self-regulated path for professional training process [15, pp.20-26]. It has been scientifically proven that „individuals are considered *self-regulators* as long as they are active, motivational participants in their own learning process" [58, p.124]. The process of teachers' professional training is delineated from the perspective of the new educational paradigms, which anticipate postmodernity through the technocentric approach, the premise of curriculum paradigm [11, p. 339]. The evolution of teacher training process is complex and contradictory. L. Papuc states that: „the paradigm shift of university pedagogic education requires the development of students' independent activity skills through self-instruction efforts [27, p.11].

Initial teacher training (ITT) and continuous professional development (CPD) are part of the education policy requirements that contribute to the improvement of professional skills. Generally, independent activity implies

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self-education, correlated with the educability factors (heredity, environment, formal education), asserting the role of the learners transformed from the object into the subject of their own becoming, as the etymology of the term suggests (gr. αὐτός (autós) - 'self', lat. educo, ere - to raise; educo, are - to cultivate), although we are witnessing the use of other derived meanings: *self-formation, self-instruction, self-information, self-development, self-evaluation (self-verification, self-appreciation), self-affirmation, self-improvement* [19, p. 128].

The postmodern education paradigm induces a new vision on teachers' professional training – learner-centered education. In the second half of the 20th century, as a result of research in the field of personality psychology, cognitive psychology, and pedagogy, the learner's self-building potential was acknowledged, as well as the importance of learners' subjective experience in the process of assimilating new knowledge and developing new skills; the impact of respecting the human dignity of individuals in the educational process [40, p.101]. „Teacher training refers to the development of a set of skills, a process deductively controlled by a model of the teaching profession which is sustainable today" [14, p. 36].

Students' professional training through independent activity contributes to the development of autonomous learning skills. The efficiency of students' independent activity constitutes an educational solution for the improvement of teachers' continuous professional development process. In this context, the efficiency of students' independent activity is determined by the degree of their motivation for autonomous learning. It is perceived that the metacognitive approach to self-study in the university environment and the research regarding the metacognitive learning strategies are relatively recent.

There is a wide variety of terms in the specialized literature for students who organize their own learning: *autonomous learner, self-directed learner, self-regulated learner, self-determined learner, independent learner, etc*. We infer that, self-instruction leads to the development of *self-learning competence*, which involves cognitive, metacognitive and emotional factors. Self-directed learning implies the learners' freedom to make decisions about their own learning needs, to set learning priorities and interests, to formulate goals and choose suitable learning styles. Self-regulated learning offers the opportunity to monitor professional development processes. In essence, *self-instruction* involves the manifestation of students' creative activism during their studies at a higher education institution, which is manifested in the organization of student activities during classes, seminars, practical activity,

and in the perception of study material, intrinsic processing, awareness of the training level and teaching-learning quality [16, p. 245].

From this perspective, *it is necessary to clarify the difference between the terms individual and independent*. Students' individual activities can be independent when students tackle the assignment on their own, without teacher's support or guidance, while independent activities can be individual and in groups and involve students' self-informing, self-organizing, self-monitoring their own learning. Dandara (2009) identifies certain *variants of organizing independent activities*: with common tasks for all students, with different tasks for each student. In this case, the activity is individualized or personalized, because it takes into account the individual characteristics of each student, their level and their learning needs [13, p. 32-38]. In a knowledge-based society, university teachers assert themselves through the skills needed for their new roles. In this sense, it is necessary to have initial quality training and develop a coherent process of continuous professional development [38, p.257]. Analyzing the changing nature of the education paradigms values in the contemporary society, M. Cojocaru-Borozan highlights the increasing role of „*self-education, self-building and self-development, self-control and self-regulation, self-assessment and self-knowledge, self-planning, self-improvement, self-achievement and self-improvement*" [9, p. 110], advancing the topicality of the research problem.

Chapter 2 „**The curricular context for students' professional development during the independent activity"** features the factors that impact the development of self-instruction in students. Based on theoretical synthesis, a *student's learning style* depends on the combination of the following factors: *the preference* for a specific dominant manner of cognitive-reflective learning; *the option* for an explicit *methodological model* (strategies, methods, tools, techniques and procedures) resonating with the specifics of academic learning, contextualized and motivated; explicit *conduct* regarding the usefulness of the independent activity.

The National Development Strategy „Moldova 2030" stipulates the importance of shifting the emphasis from knowledge acquisition to professional skills formation by increasing the internship time for teachers [47]. *University learning* refers to the evolution of the human being in higher education institutions through two interactive aspects: *inner learning* - the psychic side of the learning process, responsible for the perception, understanding, abstraction,

generalization, and reproduction of the information and *external* (behavioral) *learning* which is the outer side of the action, responsible for knowledge application and skills development [33, p. 213].

The conceptual document „ *Qualification Framework in Technical and Higher Education Institutions* (2021)", which provides the basis for the elaboration of the training curriculum, aims at "consistent implementation of qualification standards in the training process for the acquisition of professional skills required in the labor market. It also aims at conceptualizing the study program and the study plan for higher education, second-cycle programs, in which it is noted that, given the high educational level, it is mandatory for the students to develop learning competences, priority being given to individual task-based learning; the guided learning is reduced in favor of independent learning". Therefore, as mentioned in the document, the learning activity, guided or independent, is based on research [47].

Teachers' professionalization competences entail: „learning the teaching methodologies and contents; teaching students to build learning experiences; having the ability to apply effective classroom management strategies; ensuring social, civic and personal success for all learners; the ability to use modern teaching-learning technologies; collaboration with family and community to build a positive learning environment, and engaging in pedagogic reflective practices" [6].

Students' self-instruction competence involves the interdependent functioning of self-knowledge by determining the internal and external instructional resources and the self-instruction resources by contextualizing the personalized strategy of self-instruction and self-assessment. According to O. Vovniciuc (2013), „*students self-learning competence* is a superior form of organizing the academic activity, which can be individual and in groups, within and outside the classroom, directed by the teacher and accomplished by students through the use of necessary resources". *Independent academic learning* is a *competence*, which requires the combination of: „procedural *knowledge* on the peculiarities, problems, and the need for autonomous learning; *ability* to apply appropriate methodologies in general, and independent study methodologies in particular; metacognitive *skills*, self-management *skills*, intrinsic *motivation*, open *attitudes* towards knowledge with an emphasis on: *activity , responsibility, self-confidence*, *values* necessary to live in a constant changing society, freedom to make decisions and build one's own learning path" [41 , p. 6-8]. *Self-learning, correlated with self-education,*

is a goal of education and an effect of pedagogic endeavor. After all, *self-directed learning* is based on self-confidence, optimism and curiosity. Therefore, the pleasure of learning and the satisfaction associated with this noble activity are essential [23, p.46].

In this context, self-instruction involves the analysis of the paradigms that support the concept of independent learning (Tab. 1).

Table 1. Paradigms that support the concept of independent learning [23, p.46].

N d / o	Learning Paradigms	Values for students' independent activity
1.	Information processing	Autonomous information processing skills
2.	(Inter) active elaboration of knowledge	Ability to develop new knowledge
3.	Knowledge construction	Ability to develop new pedagogic ideas
4.	Self-exploration and self-discovery	Ability to explore unknown content
5.	Learning through research. Committed Learning.	Ability to engage in individual study

Considering the contemporary university mission, we spotlight *the factors that influence students' independent activity*:

(a) *at the level of cognitive orientation*: directed academic learning is inclined towards a dominated form of self-direction and self-organization. The following objectives become a priority: encouraging reflection, active and effective use of knowledge through formal and non-formal academic learning; setting goals for professional skills development and valuing experiences; interdisciplinary knowledge transfer; enhancing volitional and motivational mechanisms that would allow students to implement their higher order skills [41, p. 60].

(b) *at the level of students' current status*: balancing between the deep learning (major) and accelerated learning (minor), considering age, experience, personality type (type A, B), learning style, etc [41, p.11].

(c) *at the level of learning contents:* emergence of new types of knowledge, skills formed with the help of information and digital communication technologies, through databases, interactive CD-ROMs, etc.

(d) *at the level of information storage* in support of autonomous learning: the use of technological packages such as cable infrastructure, communication networks, e-mail, file transfer programs, access to interactive digital services, university deontological codes regarding copyright, etc. [41, p.23].

(e) *at the level of performance evaluation* there is a critical shift, perceived by actors as dominantly reproductive, towards *quality*, from product to *process*, from summative to formative evaluation, based on alternative models [6, p.41]. Careful examination of the issue of independent activity has become a complex concern in the interdisciplinary scientific field of psychology and pedagogy. Based on theoretical analysis, the quality indicators of students' independent activity have been formulated (Tab. 2).

Table 2. Quality indicators of students' independent activity

Indicators					
self-motivation for independent learning and professional development	planning the methodology for communicating learning outcomes	planning the individual study oriented towards the achievement of the goal, describing the research results	Selecting appropriate strategies for autonomous learning, exhibiting performance behavior	Using optimal self-assessment strategies	objective assessment of the quality of learned behaviors

In the same context, we highlight *the principles that facilitate independent learning*: (a) *the principle of individualization* (stimulates and motivates the use of individual and differentiated content which includes additional information used when students encounter learning difficulties; (b) *instructional scaffolding principle*, which moves students progressively towards stronger understanding and, ultimately, greater independence in the learning process; (c) *the flipped classroom principle* [5, p. 16]. At the university level, the organization of students' independent activity implies the logic of knowing the curricular content, and the ability to self-regulate one's own learning.

This chapter presents the experimental design of pre-service teachers' independent activity and elucidates the opportunities for the formation of pre-service teachers' professional skills through the use of autonomous learning

resources. *The pedagogic experiment* was driven by Elena Joița's theoretical postulate „Metacognition focuses on the active role of the subject in acquiring scientific knowledge through self-control, self-appreciation, and cognitive self-improvement" [19, p. 176].

The purpose of the experimental research aims to establish the development level of the most relevant professional skills for teachers' independent activity, and to evaluate pre-service teachers' (master's students) socio-professional self-efficacy. At the diagnostic phase, *the objectives of the investigation* aim at: developing and applying the questionnaire; identifying the weaknesses of the pre-service teachers' (master' students) professional training through independent learning and generating solutions for the students' professional training through autonomous learning. *The experimental group of research* included 114 subjects, pre-service teachers/ master's students from higher education institutions from the Republic of Moldova. By pre-service teachers, as they are called in education policy documents, we will refer to the students from the master's programs. The diagnostic stage of the pedagogic experiment was carried out during the years 2017-2018 and was administered on an experimental group (EG) of 57 pre-service teachers from the Master's Program *Education for a University Career* and *Pedagogy of Emotional Culture*, at the Faculty of Education and Informatics, and 57 pre-service teachers (CG) from the Master's Program in *Education Management*, Faculty of Education Sciences, Psychology and Arts, Department of Education Sciences, "Alecu Russo" State University from Bălți [19, p. 176].

Research methodology refers to the questionnaire developed for the pre-service teachers and assesses the quality of the most relevant professional skills necessary for autonomous learning as well as the elements that define the competence of self-instruction. In the experimental research, the most representative professional competences necessary for pre-service teachers' independent activity were taken as research variables: managerial, investigative, instrumental and self-evaluation competence.

The mechanism of decoding the results of experimental research by questioning the pre-service teachers is simple: for each question, three open-ended options have been proposed, corresponding to the means: high, medium and minimum. The respondents were asked to circle one of the options that best suits their individual representations regarding the degree of professional training.
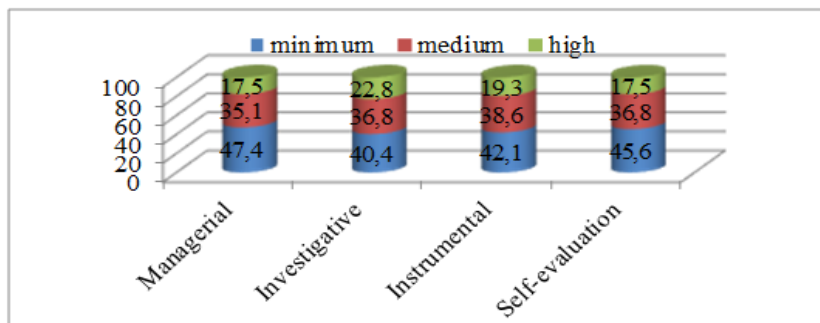
Figure 1. Degree of professional skills formation necessary for the independent activity of pre-service teachers (diagnostic phase, EG)

From the constructivist paradigm perspective, it is clear that the source of motivation for professional development is the curiosity of students. Experimental data shows that only 17.5% of the respondents have a high level of managerial competence and 35.1% have an average level. It is unfortunate that 47.4% of respondents rated themselves with a minimum level (47.4%) for the managerial competence. Based on the experimental results, as shown in figure 1, there is no significant difference between the managerial and self-evaluation competence development level. 45.6 of respondents stated that their development level of auto-evaluation competence is minimum, 36, 8% - medium level and 17, 5% - high level. The results of the investigative competence development level are alarming (minimum level - 40.4%, medium level - 36.8%), with only 22.8% of respondents rating their investigative competence development level high. The lowest means are found for the indicators of managerial competence (self-motivation for learning (minimum level - 47.4%)) and instrumental competence (minimum level - 40.4% for *the ability to select appropriate strategies for individual study and developing behaviors suitable for independent study*). There are obvious problems in the design and organization of autonomous learning reflecting students' poor motivation for learning. In higher education pedagogy there are increased efforts from behalf of academic staff to plan independent activities, expressing openness to capitalize on the factors that increase students' motivation for autonomous learning: inspiring students, formulate clear expectations, set short-term goals, use objective evaluation, stimulate discovery, exploration, epistemic curiosity and active participation, understand students' needs,

understand the adopted teaching style, focus on the quality of educational activities and not on quantity, encourage participation in extracurricular activities and career guidance actions, etc.
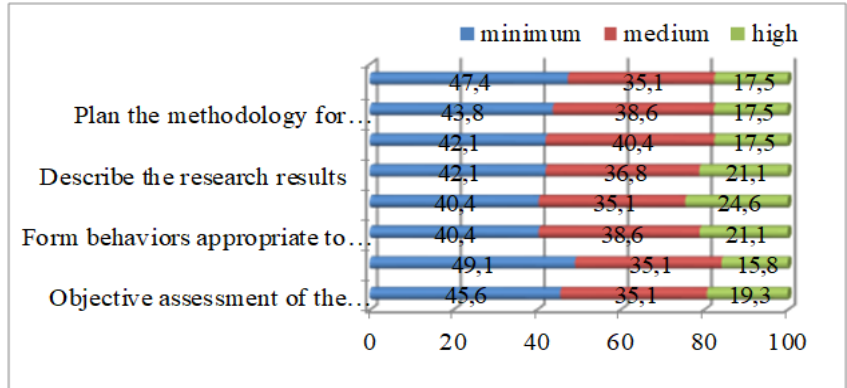

Figure 2. Degree of pre-service teachers value formation for independent activity (diagnostic, EG)

The vulnerabilities of pre-service teachers regarding independent activity in the university environment refer to: insufficient development of managerial competence, investigative competence and decision-making competence, which would allow the regulation of the independent activity in the context of higher education and would create premises for the formation of an exploratory cognitive style in the sense of autonomous learning strategies. Students' academic learning culture is oriented towards the development of professional competences that facilitate teachers' advancement in the professional career. The practice of higher education demonstrates the need to identify the students' self-instruction problems during their initial professional training. The above-mentioned aspects open the perspectives of optimizing the students' professional training process through independent activity. Promoting the use of autonomous learning resources creates premises for the identification of pedagogic conditions and thus ensuring the development of independent learning skills.

Another method applied in the pedagogic experiment was the *Test to assess the socio-professional self-efficacy of pre-service teachers/master's students*, correlated with four defining professional competences for autonomous learning. Students' professional self-efficacy is interpreted during

internships through social and cognitive skill as ,, a multidimensional construct that ensures the achievement of goals in social situations" [49].

Figure 3 reveals the significance of the experimental values of pre-service teachers' socio-professional self-efficacy.
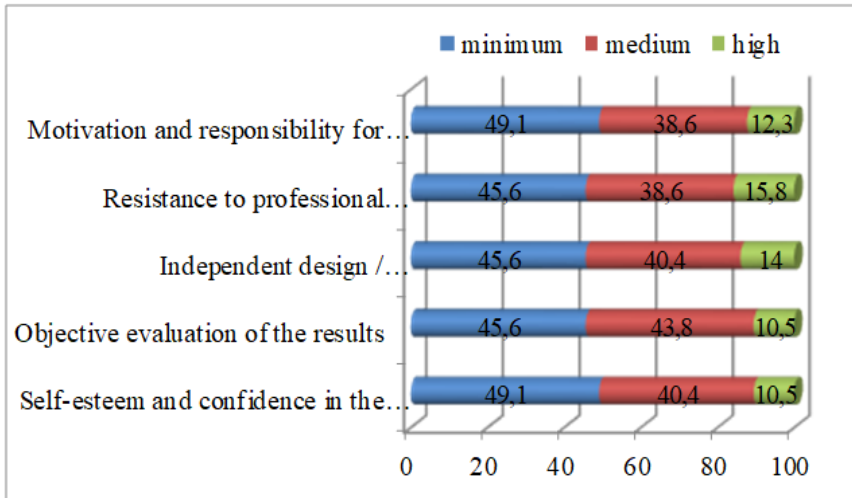

Figure 3. The degree of socio-professional self-efficacy formation in pre-service teachers/master's students (EG, diagnostic)

Figure 3 shows a concentration of experimental data at the medium and minimum levels of socio-professional self-efficacy (minimum level, 49.1%), regarding *taking responsibility for one's own success* and *having confidence in the ability to constructively address failures*. Based on these results, we deduce that the sources of self-efficacy were poorly addressed: *the experience of success, social modeling, social persuasion and emotional discipline*. In the case of 15.8% of the respondents, a high level of resistance to professional difficulties was registered; we believe that these students, as graduates of the pedagogic colleges, lived the experience of success. Master's students confirm that successful professional experiences contribute significantly to the increase of socio-professional self-efficacy.
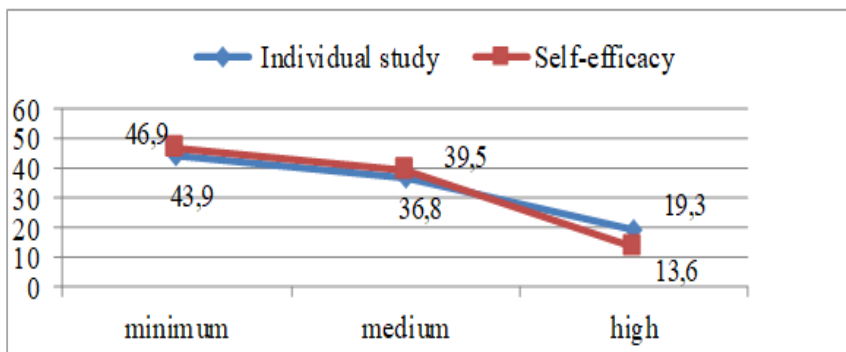
Figure 4. Comparative degrees of students' independent activity and self-efficacy formation (EG, diagnostic)

Based on the experimental data, there is a correlation between the degree of professional skills formation required for individual study and the degree of socio-professional self-efficacy (eg. high level - 19.3% - independent activity and 13.6% - self-efficacy, or the medium level 36.8% independent activity and 39, 5 - self-efficacy). The expertise of the activities organized by the master's students allows the deduction that their expectations regarding the results of the independent activity are acknowledged as important and considered generators of socio-professional self-efficacy. Master's students usually capitalize on four self-efficacy sources: *the experience of success, modeling and social persuasion, and emotional states*. Successful experience in independent learning is a factor that increases self-efficacy [48], [28], [40].

In conclusion, the research on students' independent activity revealed the inefficiency of the curricular efforts concerning pre-service teachers' independent learning. Determining the pedagogic conditions for forming professional competences of pre-service teachers through independent activity, derived from the impact factors on independent activity development, is a direction with a positive impact on higher education. Research on the dimension of professional self-formation in recent decades is focused on the study of university autonomous learning by developing students' self-instruction skills. Therefore, university educational planning is oriented towards a learning process that encourages students' independent activity aiming at asserting their self-instruction competence in various learning situations.

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CHAPTER 3. „The technology of pre-service teachers' independent activity" presents the results of research on autonomous learning strategies from the perspective of postmodern pedagogy that focuses on effective learner-centered teaching strategies, ensuring the exploration of the individual characteristics of the group of students / master's students. In this context, subchapter 3.1. presents a synthesis of university teaching strategies considered „flexible actions and operational approaches, coordinated and connected to situations that create the necessary teaching conditions which generate learning, changes of attitudes and behaviors in particular teaching contexts; aims at action specifications regarding the efficiency of the educational process; presents a procedural scheme dimensioned in such ways as to foreshadow an educational situation in pedagogical conditions that can change, involving resources and ways to activate them". From this perspective, the university pedagogic curriculum presents the updated scientific vision that rigorously structures objectives, contents and technologies for initial teacher training. Educational technologies are interpreted as „the variety of audio-visual means used in educational practice, the combination of teaching and learning strategies, implemented through the interaction between the educator and the educate" [27].

The current directions of learner-centered education gradually strike a balance between the authority of university teachers and the degree of students' autonomy. „From a source and transmitter of information, the university teacher becomes a guide, facilitator and designer of students' learning experiences. Establishing the balance between teacher's authority and the degree of students' autonomy has another important consequence - the students take responsibility for the learning outcomes, their transition to the position of the subjects of their own learning towards intellectual maturity expressed in the individual professional development path" [32]. The analysis of methodological opportunities in higher education regarding the design of independent activities for students, shows that "the basic element of the university triad *teaching-learning-evaluation* is autonomous learning" [50, p. 68-69]; "independent learning strategies have been grouped into 4 categories: cognitive, metacognitive, affective and resource management strategies" [41, p. 107].

Subchapter 3.2 describes the system of pedagogic conditions designed and used in university practice in the process of professional training through independent activity of master's students from the Master's Program „*Education for a university career*" and „*Pedagogy of emotional culture*". The master's

program „*Education for a university career*” includes the discipline *Independent academic learning* which was used as a starting point to conceptualize the pedagogic conditions for forming professional competences of pre-service teachers through independent activity. In this research we focused on clarifying the university teaching technologies that have a high potential for the development of independent activity skills. The specificity of university education, coherently facilitated by the curriculum paradigm and the constructivist paradigm, implies the permanent reconsideration and capitalization of independent learning strategies in the spirit of self-directed and autonomous learning.

The conceptualization and description of pedagogic conditions necessary for the capitalization of the independent learning technology was anticipated by the analysis of the specialized literature on autonomous learning. The purpose was to spotlight the constructive factors that have a considerable impact on the development of pre-service teachers' self-instruction skills with a positive impact on strengthening other professional competences. *The final stage of the investigation presents the experimental validation of the pedagogic conditions for forming professional competences of pre-service teachers through independent activity*, based on theoretical foundations of autonomous learning and the organic combination of the theoretical investigation results and the data from the diagnostic stage of the experiment.

We define pedagogic conditions as „a system of strategic actions, scientifically founded, aimed at ensuring the positive dynamics of the development of an independent learning style in pre-service teachers” [68]. „Designing the university teaching activity starting from the students' learning needs, using interactive strategies, encouraging learning autonomy, and using of a wide range of assessment and self-assessment methods” is a priority for the initial teacher training [66], [29, p.11]. The principles of selecting the university didactic technologies for professional training for the master's programs refer to: the connection of the contents and learning outcomes to the professional universe; students' involvement in their own training path; the capitalization of didactic technologies of training through research etc. [27, p. 43]. Figure 5 reflects the conditions for forming professional competences of pre-service teachers through independent activity.
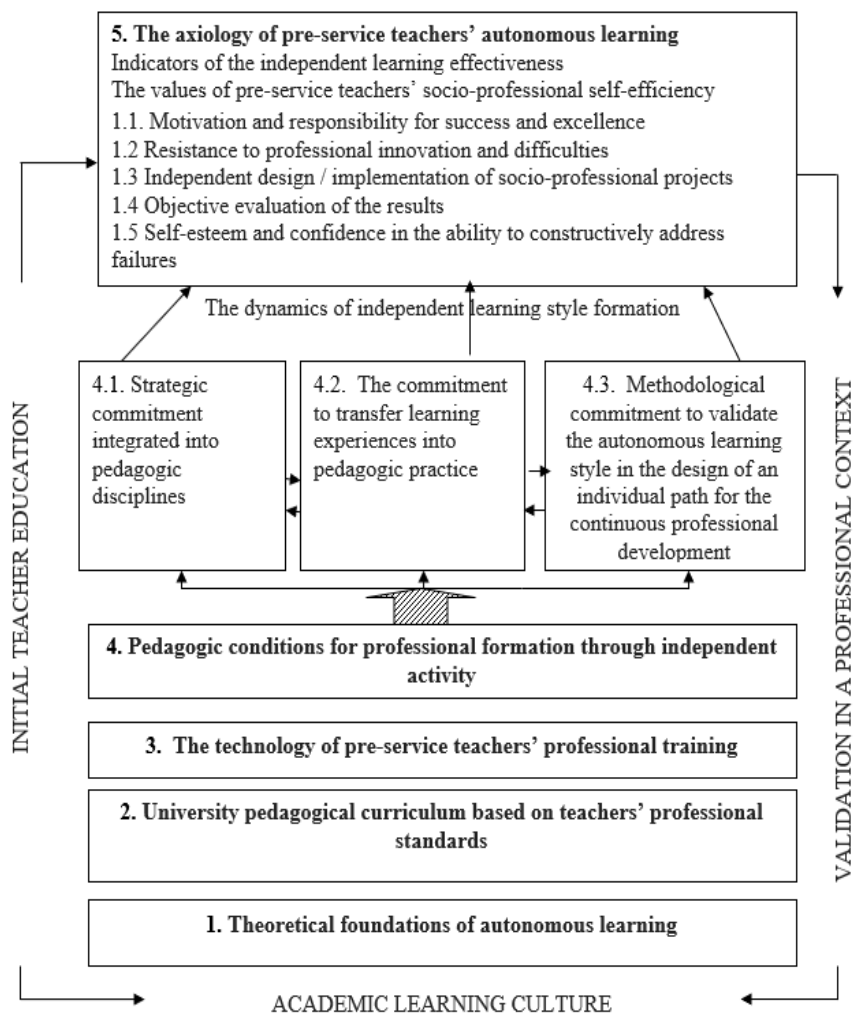
5. The axiology of pre-service teachers' autonomous learning
Indicators of the independent learning effectiveness
The values of pre-service teachers' socio-professional self-efficiency
1.1. Motivation and responsibility for success and excellence
1.2 Resistance to professional innovation and difficulties
1.3 Independent design / implementation of socio-professional projects
1.4 Objective evaluation of the results
1.5 Self-esteem and confidence in the ability to constructively address failures

The dynamics of independent learning style formation

4.1. Strategic commitment integrated into pedagogic disciplines

4.2. The commitment to transfer learning experiences into pedagogic practice

4.3. Methodological commitment to validate the autonomous learning style in the design of an individual path for the continuous professional development

INITIAL TEACHER EDUCATION

VALIDATION IN A PROFESSIONAL CONTEXT

4. Pedagogic conditions for professional formation through independent activity

3. The technology of pre-service teachers' professional training

2. University pedagogical curriculum based on teachers' professional standards

1. Theoretical foundations of autonomous learning

ACADEMIC LEARNING CULTURE

Figure 5. Pedagogic conditions for forming professional competences of pre-service teachers through independent activity.

Designing master's degree courses requires a pedagogical management adapted to the existing human resources (teachers-students), material (space-time-available didactic base), capitalizable at mono-, intra-, inter- or / and trans disciplinary level, based on different instructional forms (documentation

activities, practical activities), usually ended by exams or colloquia (semiannual, annual) held in writing, orally, through practical activities aiming at designing an individual self-formation path, etc. *The university pedagogic curriculum*, in full agreement with teachers' professional standards, is periodically reconsidered (especially at the level of teaching technologies) in relation to *the principles of academic learning*: focusing on the learning situation elements and on opportunities and strengths versus weaknesses and constraints; establishing the expectations level and the results of self-instruction skills development from the point of view of the evaluation / estimation of the acquired values in the short, medium and long term; harmonizing learning styles with bio psychosocial rhythms, with the context values and the resources integrated into the professionalization plan; coordination of the personal development plan with the one proposed and expected by the institution in which they study, to which the professional, formal and non-formal roles can be associated; mentoring / academic tutorial offer [24, p.62], [25]. It has been experimentally demonstrated that the systematic renewal of teacher training technology contributes to the development of independent learning skills, and the formation of critical, active and creative spirit in pre-service teachers.

The technology of professional formation of pre-service teachers from the master's programs entails the pedagogic conditions that contribute to students' awareness regarding the role of self-construction and self-development, self-control and self-regulation, self-assessment and self-knowledge, self-correction, self-improvement and self-realization, self-organization of their own learning activity expressing tendencies to develop an autonomous learning behavior. The technologies of pre-service teachers' professional formation for independent activity imply the actions of professional self-instruction subordinated to research in order to generate qualitative changes. **The pedagogic conditions for forming professional competences of pre-service teachers through independent activity** refer to the formation of students' individual study skills: (a) as benchmarks for students' autonomous learning during formal training (learning management and motivation); (b) as students' personal resources reflecting the value of their ideas, interests, and learning goals, as well as the environment capable of keeping them actively engaged in learning activities (intelligent reading); (c) as the monitoring of an individual studying path (Fig. 6).
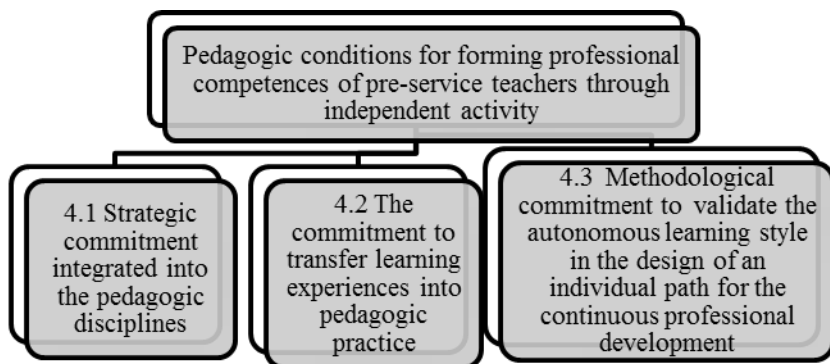
Figure 6. Pre-service teachers' professional formation through independent activity

Based on theoretical considerations, figure 6 foreshadows the categories of teaching approaches used in the concerned master's programs „The strategies used for the development of learning autonomy cover methods aiming at developing individual study skills. Academic autonomy refers to the creation of a new learning framework that enables students to develop an individual plan for autonomous learning" [20, pp. 4-13], [15].

The strategic commitment integrated into the pedagogic disciplines (the module *Independent Learning Activity)* refers to the exploration of the university pedagogical curriculum aiming at forming professional competences that enable the development of an autonomous learning style in pre-service teachers, reflected in the values of socio-professional self-efficacy: motivation and responsibility for effectiveness, success and excellence, resilience to new professional contexts and difficulties, independent design / implementation of socio-professional projects, focusing on objective evaluation, self-esteem, and confidence in the ability to constructively address failures in the process of individual study.

The subjects of the master's program „*Education for a university career"*: *Philosophy and Axiology of Education, Paradigms of Contemporary Education, University Curriculum Design, Educational Policies in University Education, Academic Evaluation in Higher Education / Fundamentals and Formative Strategies for an Academic University Career,* and the master's program *Pedagogy of Emotional Culture* through the discipline *Philosophy of Education, Social Communication, Didactic-Scientific Discourse*, have represented an area for the implementation of the concerned pedagogical

conditions. The process of developing independent study skills involves the whole repertoire of *autonomous learning methods*, necessary for self-directed learning: *contextual reading strategy*, *high-performance reading method*, RICAR technique (paging/browsing, question, actual reading, exploring the message, review), SPIR technique (Survey, Preview, Inview, Review); PQRST technique (Preview , Question, Read, Summarize, Test); SQ3R technique (Survey, Question, Read, Recite, Review); APASE technique (A – the initial training, the warming-up for reading, Planning , Adaptation, Study, Evaluation); MURDER technique (Mood, Understand, Recall, Digest, Expand , Review); text commentary technique, the technique of reading with composition of written text, content analysis learning, mind mapping technique, demonstration technique, learning through meaning technique, comprehension monitoring technique, etc. [23, p.73].

The transfer of learning experiences into pedagogic practice involves the engagement of master's students in the development of products as the outcome of the independent activity: *thematic essays, research projects, schematic graphics on the need for continuous professional development etc.*

The methodological demarche of validating the autonomous learning style in the design of the independent continuous professional development path. The dynamics of autonomous learning style formation *is determined by the functionality of the values specific to self-instruction (analytical thinking, critical thinking, reflective-metacognitive thinking, creative thinking*, *self-confidence, self-esteem, intrinsic motivation*), which reflects the autonomous learning, stimulated by the interdependence of the following mechanisms: *volitional mobilization* and awareness of the need for a self-formed learning-oriented organizational culture; (b) *disciplining and determining the self-formation external sources* (c) *being open to self-knowledge,* continuing self-education and self-instruction, (d) *taking responsibility for the results of professional training*. The outcomes of this interaction are reflected in the values of self-instruction competence.

The axiology of pre-service teachers' autonomous learning is represented by the indicators of the independent learning effectiveness and the values of pre-service teachers' socio-professional self-efficacy conceived from the perspective of postmodern approach to teacher training that prioritizes self-thinking, personal involvement combined with self-regulation, personalized learning, and encourages creativity and metacognitive skills aiming at achieving the objectives of professional development [68, pp. 274-290].

Students' professional self-efficacy can be analyzed at the concept subconstructs level through professional behaviors: setting goals and choosing an appropriate course of action, beliefs about the ability to handle tasks, and beliefs about overcoming failure.

Table 3. Socio-professional self-efficacy values conceived from the perspective of pre-service teachers' professional competences

Skills	Students socio-professional self-efficacy values
1. Managerial 2. Investigative 3. Instrumental 4. Self-evaluation	Motivation and responsibility for success and excellence; resistance to new professional conditions and difficulties Independent design / implementation of socio-professional projects Objective evaluation of the results Self-esteem and confidence in the ability to respond constructively to failures

The research objectives at the formation and control stage were as follows: comparative evaluation of pre-service teachers' preparedness for independent activity and description of the formative stages of pre-service teachers' independent activity values. The formative experimental approach was driven by the results obtained during the phase of pedagogic diagnosis.

The description of the experimental results at the control stage refers to the data obtained from the implementation of the *pedagogic conditions for forming professional competences of pre-service teachers through independent activity* during the years 2017 - 2020 in the academic groups from year I and II, from the Master's Program „Education for a university career" and the Master's Program „Pedagogy of emotional culture" (57 subjects), at I. Creangă State Pedagogical University. For the comparative analysis, the questionnaire was also applied to CG (57 subjects from year I and II) from Alecu Russo State University form Balti. The research methodology included the research questionnaire aiming at assessing the quality of the most important professional competences needed for autonomous learning, and the test designed to evaluate the students' socio-professional self-efficacy correlated with the four defining professional competences for autonomous learning.

The application of the questionnaire in the experimental group showed different levels for each of the assessed professional competences (managerial, investigative, instrumental and self-assessment competence). The comparative study of the experimental data from the diagnostic stage and from the control

stage of the experiment, reflected in Fig. 7, demonstrates the effectiveness of pedagogic implications through university disciplines. We notice a significant increase in the results of managerial competence for the high level (from 17.5% to 47.4%) and for the medium level (from 35.1% to 40.4%).
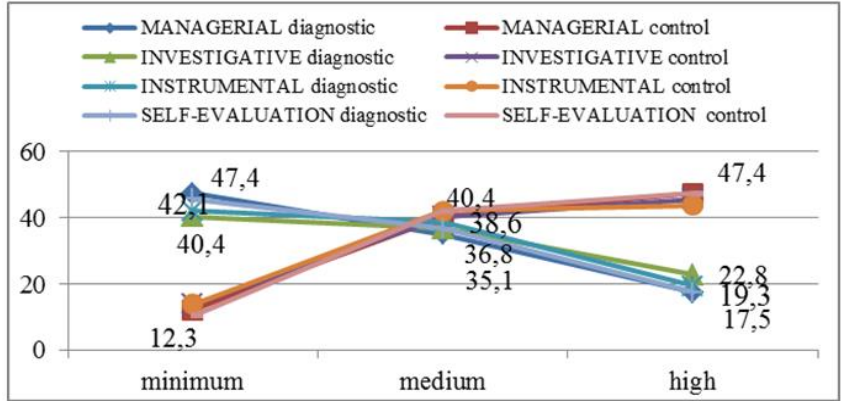

Figure 7. Levels of professional skills formation required for pre-service teachers' independent activity (diagnostic-control, EG)

The decrease of the experimental values for the minimum level (from 47.4% to 12.3%) demonstrates the positive impact of the university didactic strategies oriented towards the gradual development of an autonomous learning culture *promoting flexible learning*, used anytime and anywhere, involving individualized and personalized teaching-learning strategies, which eliminate the barriers that may arise in the educational process focused on stimulating autonomy by respecting the needs of pre-service teachers.

The degree of *students' investigative competence* increased comparatively (high level from 22.8% to 45.6%, medium level from 36.8% to 40.4%), and the data for the minimum level decreased as a result of the strategies applied in order to positively stimulate the values of independent activity (from 40.4% to 14.0%). The increased level of students' instrumental competence (for the high level from 19.3% to 43.8%, for the medium level from 38.6% to 42.1%, subsides the results for the minimum level (from 42, 1% to 14.0%). It is worth paying attention to the analysis of the data obtained by the experimental group of master's students at the diagnostic and control phases, obtained from the application of two instruments (the questionnaire and the test).

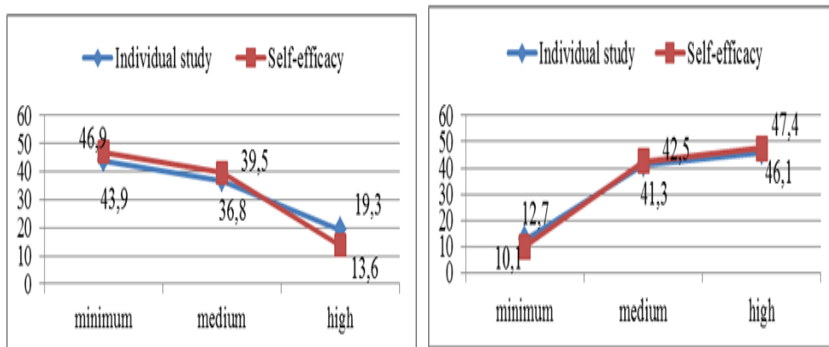Experimental group (diagnostic phase - control phase)

Figure 8. Comparative values of the degree of pre-service teachers'
preparedness for individual study and of socio-professional self-efficacy (EG,
diagnostic -control)

The data in Figure 8 shows higher results of socio-professional self-efficacy of students at the control stage (high level - individual study - from 19.3% to 46.1%, self-efficacy - from 13.6% to 47, 4 %); (medium level - individual study - from 36.8% to 41.3%, self-efficacy - from 39.5% to 42.5%), (minimum level - individual study - from 43.9% to 12, 7%, self-efficacy - from 46.9% to 10.1%). The conditions for forming professional competences of pre-service teachers through independent activity for their personal self-efficacy, identified in the specialized literature, demonstrated the efficiency of the technology of students' autonomous learning in the process of professional formation through independent activity aiming at optimizing academic learning. *Students' professional self-efficacy* can be analyzed in terms of independent learning skills: setting goals and choosing an appropriate course of action, having beliefs about the ability to handle individual tasks and beliefs regarding overcoming failure. The modeling of the pedagogic conditions was validated through the values of pre-service teachers' socio-professional self-efficacy. The successful achievement of these objectives was possible by designing self-learning activities, fostering self-motivation for individual study, and strengthening students' professional skills.

GENERAL CONCLUSIONS AND RECOMMENDATIONS

1. The theoretical study of pre-service teachers' professional training through independent activity aiming at ensuring self-efficacy and professional effectiveness ***determined the examination of the theoretical and methodological foundations of autonomous learning in the academic environment***. The need to train highly qualified specialists in the field of education and the need to form responsible citizens, able to meet individual and societal needs, appear as one of the priorities of the teacher training system, and of the normative-regulatory documents which require innovative models of teachers' development from the perspective of professional training through continuous self-instruction and self-formation in the plan of an autonomous learning culture [46], [47], [65], [66].

2. The current tendency to reform the higher education in the Republic of Moldova implies a qualitative change in the status of students regarding their own professional training process, which implies resistance to difficulties and increased responsibility for career development. For these reasons, ***the role of the university is to contribute to the formation of students' self-instruction skills by applying self-directed learning strategies*** that can facilitate career advancement and the development of professional self-efficacy. In this context, building a supportive environment based on the academic learning culture values creates opportunities for students to pursue their own professional development [64, pp. 16-20].

3. The scientific research in the field of pedagogy enables the ***decoding of research operational concepts:*** professional competences, independent activity, autonomous learning, self-instruction competence, etc.; indicating that self-directed learning autonomy implies *the development in pre-service teachers of the ability to design the independent learning activity, to carry out responsible actions for their professional development, develop metacognition skills and the ability to self-regulate their learning*, skills generated by teachers' socio-professional mobility. Research in the field of self-education and self-instruction reveals various concepts for students who organize their own learning: *self-directed learner, self-regulated learner, self-determined learner, self-education, independent learner, expert learner*. Self-directed learning has multiple social connotations, depending on contextual and consensual experiences, which suggests designing self-directed learning

activities from the perspective of social experiences acquired in a professional context [63].

4. *University professional training involves equipping students (master's students) with certain self-instruction skills*, self-directed learning giving them freedom to make their own decisions about their own learning needs, learning objectives, motivation, interests, choice of autonomous learning styles and strategies, and monitor their learning progress. From this perspective, *students' motivation for autonomous learning* has represented one of the research objectives achieved through theoretical synthesis of self-regulated learning. In order to evaluate and describe the degree of pre-service teachers' (master's students) preparedness for independent activity and self-directed learning, we have elaborated *the independent activity quality indicators in the context of pre-service teachers' professional formation and the independent learning skills assessment criteria,* derived from the theoretical precepts of autonomous learning [65], [66].

5. *The pedagogic experiment carried out in higher education led to* **(a)** *awareness of the complexity of independent learning process,* professionalization requiring the development of management skills, asserting autonomy and professional responsibility, **(b)** *the ascertainment that the technological approach to the issue of academic learning is insufficient*; **(c)** *the establishment of three levels (high, medium and minimum) for the development of pre-service teachers' independent learning skills,* **and** *the modest training of pre-service teachers to use effective independent learning strategies;* the self-learning skills have emerged as being empirically developed [65].

6. From a praxiological standpoint, *the pedagogic conditions for forming professional competences of pre-service teachers through independent activity* were established, beginning with the evaluation of self-instruction skills aiming at anticipating the professional failure at the beginning of the pedagogic career. These conditions were deduced from the analysis of the development factors of students' independent learning skills (cognitive, metacognitive and psycho-emotional in nature), oriented towards the encouragement of independent learning skills development in students. The analysis of self-instruction strategies uncovered their diversity and the need to create optimal conditions for self-instruction and self-knowledge. The acquisition of self-instruction strategies helps students discover their own possibilities, abilities, learning preferences and needs. The pedagogic research demonstrates the

importance of university teachers concerns in planning students' independent activity, oriented towards the development of self-instruction skills, and the promotion of a self-directed learning culture. The implementation of the pedagogic conditions at the Master's Program 'Education for a professional career' confirmed the research hypothesis: ***initial teacher training through independent activity can be optimized by establishing theoretical and methodological guidelines regarding autonomous learning,*** aiming at clarifying the denotation of operational research concepts (professional skills, independent activity , autonomous learning, self-instruction competence), which would allow the experimental study of the preparedness degree pre-service teachers have for independent activity in the university environment, constituting a basis in interpreting the students' motivation for autonomous learning, and would facilitate the process of identifying important pedagogic conditions for pre-service teachers' professional formation through independent activity [68].

7. ***Enhancing students' learning culture*** is a concern of higher education pedagogy due to its value in ensuring the efficiency of professional development, thus increasing students' integration in the socio-professional field. The creation of psycho-pedagogic conditions in the university environment and their transformation into resources to facilitate social learning is an important indicator of quality in higher education.

Based on our findings, we *formulate the following **recommendations*:**

- *for the university curriculum designers* – designing, at teleological and technological level, the methodological framework necessary for the effective accomplishment of pre-service teachers' independent activity reflected in separate modules or courses that would facilitate the development of students' self-instruction competence.

- *for the quality departments* - design and implementation of methodological activities for university teachers' continuous development aiming at promoting the values of autonomous learning in the university environment;

- *for pre-service teachers / master's students*: strengthening their cognitive and metacognitive abilities *(analytical thinking, critical thinking, creative thinking, reflexive-metacognitive thinking) and non-cognitive skills (self-esteem and motivation for self-directed learning)*.

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ADNOTARE
ROMAN Daniel
„Condiții pedagogice de formare a competențelor profesionale prin activitatea independentă a studenților pedagogi”,
teză de doctor în științe ale educației, Chișinău, 2022

Structura tezei include: introducere, trei capitole, concluzii generale și recomandări, bibliografie din 217 de surse, adnotare (română, engleză, rusă), concepte-cheie în limbile română, engleză, lista abrevierilor, 120 pagini de text de bază, 23 de tabele, 18 figuri, 8 anexe.

Publicații la tema tezei: 7 lucrări științifice.

Concepte-cheie: activitate independentă, învățare autonomă, formare inițială a cadrelor didactice, studenți pedagogi, competențe profesionale, studiu individual, competență de autoinstruire, capacități de învățare independentă, autoeficiență socio-profesională.

Domeniul de studiu: Teoria generală a educației.

Scopul investigației constă în: elaborarea, fundamentarea teoretică și valorificarea experimentală a condițiilor pedagogice de formare a competențelor profesionale ale studenților pedagogi prin activitatea independentă.

Obiectivele cercetării vizează: determinarea fundamentelor teoretice și metodologice ale formării profesionale a studenților pedagogi din perspectiva învățării autonome; elucidarea semnificației conceptelor operaționale ale cercetării: competențe profesionale, activitate independentă, învățare autonomă, competență de autoinstruire, capacități de învățare independentă etc; interpretarea motivației pentru învățarea autonomă și a gradului de pregătire a studenților pedagogi pentru activitatea independentă în mediul universitar; descrierea factorilor dezvoltării capacităților de învățare independentă a studenților pedagogi; conceptualizarea și descrierea condițiilor pedagogice ale dezvoltării competențelor profesionale prin activitatea independentă a studenților.

Noutatea și originalitatea științifică a cercetării constă în: interpretarea fundamentelor teoretice și metodologice ale formării profesionale a studenților pedagogi din perspectiva învățării autonome; descrierea semnificației conceptelor operaționale ale cercetării: competențe profesionale, activitate independentă, învățare autonomă, competență de autoinstruire etc; interpretarea motivației pentru învățare autonomă și a gradului de pregătire a studenților pedagogi pentru activitatea independentă în mediul universitar; sintetizarea indicatorilor, valorilor învățării independente și a criteriilor de evaluare a nivelului de formare a capacităților de învățare independentă a studenților; elucidarea factorilor și a mecanismelor dezvoltării capacităților de învățare independentă a studenților; întemeierea științifică a condițiilor pedagogice de formare profesională prin activitatea independentă ce facilitează autoeficiența profesională.

Rezultate obținute ce contribuie la soluționarea unei probleme științifice importante în cercetare vizează: fundamente teoretice ale formării profesionale inițiale prin activitatea independentă, descrierea semnificației conceptelor operaționale ale cercetării: competențe profesionale, activitate independentă, învățare autonomă, competență de autoinstruire, capacități de învățare independentă etc; specificul pregătirii studenților pedagogi pentru activitatea independentă în mediul universitar; factorii dezvoltării capacităților de învățare independentă a studenților și condițiile pedagogice de formare profesională prin activitatea independentă a studenților pedagogi, rezultate științifico-practice care au contribuit la dezvoltarea teoriei generale a educației și a pedagogiei universitare.

Semnificația teoretică a cercetării: stabilirea fundamentelor teoretice ale formării profesionale a studenților pedagogi prin activitatea independentă; interpretarea motivației pentru învățarea autonomă a studenților; analiza factorilor dezvoltării capacităților de învățare independentă a studenților; sintetizarea indicatorilor, valorilor învățării independente și a criteriilor de evaluare a nivelului de dezvoltare a competenței de autoinstruire, formularea concluziilor științifice privind învățarea independentă a studenților în procesul formării profesionale universitare.

Valoarea aplicativă a cercetării: elucidarea experiențelor metodologice de dezvoltare profesională a studenților pedagogi pentru promovarea culturii învățării autonome în mediul universitar; constatarea experimentală a specificului autoinstruirii și a gradului de pregătire a studenților pedagogi pentru activitatea independentă; elaborarea și implementarea condițiilor pedagogice ale formării profesionale prin activitatea independentă pentru autoeficiența personală a studenților pedagogi.

Implementarea rezultatelor științifice a fost realizată prin validarea experimentală a condițiilor pedagogice de formare profesională prin activitatea independentă a studenților pedagogi la catedra „Științe ale educației", UPS „I. Creangă" și la Facultatea de Științe ale educației, psihologie și arte, Catedra Științe ale educației, Universitatea de Stat „Alecu Russo" din Bălți.

ANNOTATION
ROMAN Daniel
„Pedagogic conditions for forming professional competences of pre-service teachers through independent activity"

PhD thesis in education sciences, Chisinau, 2022

Thesis structure: introduction, three chapters, general conclusions and recommendations, bibliography from 217 sources, annotation (Romanian, English), key concepts in Romanian, English, list of abbreviations, 120 pages of basic text, 23 tables, 18 figures, 8 annexes.

Publications on the research topic: 7 scientific papers.

Key concepts: independent activity, autonomous learning, initial teacher training, pre-service teachers, professional skills, individual study, self-instruction competence, independent learning skills, socio-professional self-efficacy.

Field of study: General theory of education.

The purpose of the investigation consists in the elaboration, theoretical substantiation and experimental capitalization of the pedagogic conditions for forming professional competences of pre-service teachers through independent activity.

Research objectives aim at: determining the theoretical and methodological foundations of the pre-service teachers' professional training from the perspective of autonomous learning; elucidating the significance of the operational concepts used in the research: professional competences, independent activity , autonomous learning, self-instruction competence, independent learning skills, etc.; explaining the motivation for autonomous learning and the degree of pre-service teachers preparation for the independent activity in the university environment; describing the factors impacting the development of pre-service teachers' independent learning skills; conceptualizing and describing the pedagogic conditions for forming professional competences of pre-service teachers through independent activity .

Scientific originality and novelty of the research consists in: clarifying the theoretical and methodological foundations of pre-service teachers professional training from the perspective of autonomous learning; describing the significance of the concepts used in the research: professional competences, independent activity, autonomous learning, self-instruction competence, etc.; explaining the motivation for autonomous learning and the degree of pre-service teachers preparation for independent activity in the university environment; synthesizing the independent learning indicators and values, and the assessment criteria for the development level of students' independent learning skills; elucidating the factors and mechanisms for the development of students' independent learning skills; introducing the scientific foundation of pedagogic conditions for forming professional competences of pre-service teachers through independent activity that facilitates their professional self-efficacy.

The obtained results that contribute to solving an important scientific problem in the research cover: the theoretical foundations of initial teacher training through independent activity; defining the concepts used in the research: professional competences, independent activity, autonomous learning, self-instruction competence, independent learning skills etc; the specifics of preparing the pre-service teachers for independent activity in the university environment; the factors impacting the development of students' independent learning skills, and the pedagogic conditions for forming professional competences of pre-service teachers through independent activity, scientific-practical results that contributed to the development of the general theory of education and higher education pedagogy.

Theoretical significance of the research: the establishment of theoretical foundations of pre-service teachers' professional training through independent activity; delineation of students' motivation for autonomous learning; analysis of the factors that contribute to the development of students' independent learning skills; synthesizing the independent learning indicators and values, and the assessment criteria for the development level of students' independent learning skills; formulating scientific conclusions regarding students' independent learning during university training.

Applicative value of the research: clarifying the methodological experiences of pre-service teachers' professional development aiming at promoting a culture of autonomous learning; experimentally determining the specifics of self-instruction and the degree of pre-service teachers' preparedness for independent activity; elaborating and implementing the pedagogic conditions for forming professional competences of pre-service teachers through independent activity aiming at developing their personal self-efficacy.

The **implementation of the scientific results** was achieved through the experimental validation of the pedagogic conditions for forming professional competences of pre-service teachers through independent activity at the Education Sciences department, I. Creanga State Pedagogical University, and at the Faculty of Education Sciences, Psychology and Arts, the Department of Education Sciences, Alecu Russo State University from Balti.

ROMAN Daniel

PEDAGOGIC CONDITIONS FOR FORMING PROFESSIONAL COMPETENCES OF PRE-SERVICE TEACHERS THROUGH INDEPENDENT ACTIVITY

Specialty 531.01 - General theory of education

SUMMARY of the
Doctoral Thesis in Education Sciences