

UNIVERSITATEA TEHNICĂ „GHEORGHE
ASACHI” DIN IAȘI

DEPARTAMENTUL PENTRU PREGĂTIREA PERSONALULUI
DIDACTIC

UNIVERSITATEA „A.I. CUZA” DIN IAȘI
FACULTATEA DE FILOSOFIE SI STIINTE SOCIAL POLITICE

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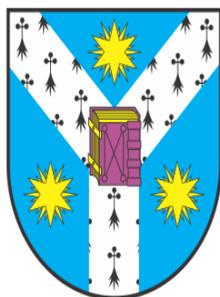
VOCEA TINEREI GENERATII (TAVES 2015)

care va avea loc la Iași - UT Iasi, corp CH, et III (vis a vis de
Iulius Mall)

în data de 29 mai 2015 ora 15.00.



IAȘI - ROMÂNIA
29 mai 2015



Lucrarile si posterele selectate de organizatori si prezentate de autori vor fi incluse intr-un volum (format electronic) pe site-ul DPPD TU Iasi iar cele mai bune lucrări vor participa la conferinta internationala **EPC 2016** si se vor publica într-un volum la o editură recunoscută **CNCSIS**. Sunt oferite diplome nominale de participare.

PROPUNEM TRATAREA UNOR TEME, PRECUM:

- Societatea Cunoașterii;
 - Politici de Dezvoltare Durabila;
 - Educație si Perspective Interdisciplinare;
 - Aspecte Istorice, Epistemologice, Artistice și Etice ale Educației si Dezvoltarii Tinerei Generatii;
 - Limbă, Cultură, Societate;
 - Marketing, Management și Antreprenoriat Educațional
 - Exploatarea Resurselor IT;
 - Securitatea Nationala si Internationala;
 - Alternative Strategice și Forme de Dezvoltare in Societate;
- Lista este deschisă pentru alte teme din aria conferinței.

INFORMAȚII PENTRU AUTORI

Lucrările, redactate în romana (cu rezumat in limba engleza) vor fi trimise pe adresa: simpozionstudentiTAVES2015@gmail.com

Date limită: 30 aprilie 2015 - primirea lucrărilor în extenso în format Word și PDF conform instrucțiunilor de redactare ce se gasesc la adresa: www.dppd.tuiasi.ro si in anexa.

Taxa de participare, de 20 RON pe lucrare, se achită în contul: **EUROSTEPS, RO 66 BRDE 240 SV 32255022400, cod CUI 16946308** deschis la BRD IASI, sau la inregistrarea participantilor. Informații suplimentare pot fi gasite si solicitate pe adresa conferintei.

TITLUL IN LIMBA STRAINA

BY

AUTOR PRENUME NUME DE FAMILIE*

“Afilieră Universitate, localitate,
Departament

Received:

Accepted for publication:

Abstract. Scrieți aici rezumatul în limba engleză. Redactați un rezumat de 100-200 cuvinte, menționând cele mai importante aspecte ale lucrării dv.

Key words: primul cuvânt cheie; al doilea cuvânt cheie; al treilea cuvânt cheie; al patrulea cuvânt cheie; ultimul cuvânt cheie.

1. Titlul Primei Secțiuni

Introduceți prima secțiune aici. Utilizați cât spațiu aveți nevoie. Introduceți prima secțiune aici. Utilizați cât spațiu aveți nevoie. Introduceți prima secțiune aici. Utilizați cât spațiu aveți nevoie. Utilizați cât spațiu aveți nevoie. Introduceți prima secțiune aici. Utilizați cât spațiu aveți nevoie. Utilizați cât spațiu aveți nevoie. Introduceți prima secțiune aici. Utilizați cât spațiu aveți nevoie.

2. Titlul Celei de a Doua Secțiuni

Introduceți a doua secțiune aici. Utilizați cât spațiu aveți nevoie. Introduceți a doua secțiune aici. Utilizați cât spațiu aveți nevoie. Introduceți a doua secțiune aici. Utilizați cât spațiu aveți nevoie. Utilizați cât spațiu aveți nevoie. Introduceți a doua secțiune aici. Utilizați cât spațiu aveți nevoie. Utilizați cât spațiu aveți nevoie. Introduceți a doua secțiune aici. Utilizați cât spațiu aveți nevoie.

*e-mail: emailulmeu@yahoo.co.uk

spațiu aveți nevoie.

REFERENCES

Autor (in ordinea mentiunii in text) nume de familie, inițiala prenume, *Titlu lucrare citată*, Editura, Localitatea, anul.

TITLU LUCRARE IN LIMBA ROMÂNĂ

(Rezumat)

Redactați rezumatul lucrării în limba română. Va fi același rezumat ca în limba engleză.

CAMERA-READY PAPER SUBMISSION

Each paper must adhere to the specifications given below (see the example pages):

1. **Page Setup:** Paper Size: A4 format (210mm width × 297mm height); Margins: Top=4.5cm, Bottom=5cm, Left=4.2cm, Right=4.2cm, Gutter=0cm; Header/Footer: Header=4.5cm, Footer=0cm; Different Odd and Even Pages; Header Different First Page.
2. **First Header:** Times New Roman CE, 8pt., Normal, Centered, Upper Case Letters (see the example pages).
3. **Even Header:** Times New Roman CE, 8pt., Normal, Centered, Upper Case Letters, Borders - 3/4pt. double line style - after text. The double line will be followed by 1 blank line 1 li=11pt (see the example pages).
4. **Odd Header:** Times New Roman CE, 8pt., Normal, Centered, Upper Case Letters, Borders - 3/4pt. double line style - after text. The double line will be followed by 1 blank line 1 li=11pt. (see the example pages).
5. **Spacing:** Use single space.
6. **Title paper:** Times New Roman, 12pt., Normal, Upper Case Letters, Centered, Spacing Before 3 li=36pt.
7. **Authors' Names:** Times New Roman CE, 10pt., Normal, Upper Case Letters, Centered. For male authors only the first letter of first name is required. Full first name is required for female authors. Write the word "BY" in Times New Roman, 9 pt., Normal, Upper Case Letters (this word use Spacing Before 1 li = 12pt.).
8. **Abstract** (in English): 100 words (5 lines approximately). This paragraph will be formatted as follows: Times New Roman, 9pt, Normal, Justified, Indentation from Left 1cm, Indentation from Right 1cm, Spacing Before 1 li = 6pt., Line Spacing Auto. Write the word "Abstract" in 9 pt., Normal, Bold.

9. **Keywords:** Times New Roman, 9pt., Normal, Justified, Indentation from Left 1cm, Indentation from Right 1cm, Spacing Before 1 li = 6pt. Write the word "Keywords" in 9 pt., Normal, Bold.

10. **Abstract** (in Romanian): 100 words (5 lines approximately). This paragraph will be formatted as follows: Times New Roman CE, 9pt., Normal, Justified, Indentation First Line 1cm. Use Times New Roman CE, 9pt., Normal, Centered, Upper Case Letters, Spacing Before 2 li=20pt., for the paper title. Write the word "Rezumat" in Times New Roman, 9 pt., Normal, Centered, Spacing After 1 li=9pt.

11. **First order headings:** Times New Roman, 11pt., Normal, Bold, Centered, Lower Case Letters, Spacing Before 2 li = 20pt., Spacing After 1 li =10pt.

12. **Second order headings:** Times New Roman, 9pt., Normal, Bold, Centered, Lower Case Letters, Spacing Before 1 li = 10pt., Spacing After 1 li =10pt.

13. **Main Text:** Use Times New Roman, 11pt., Normal, Indentation First Line 1cm. The figures and the tables are included in text. Usually, the figures are centered (Spacing Before 1 li = 10pt., Spacing After 1 li = 6pt.) and followed by their captions.

14. **Tables' captions:** Times New Roman, 9pt., Italic, Centered. Tables should also be numbered sequentially following the word **Table** (Times New Roman, 9pt., Bold, Centered, see the example pages).

15. **Figures' captions:** Times New Roman, 9pt., Normal, Centered, Spacing Before 1 li=6pt., Spacing After 1 li =10pt. Figures should be numbered sequentially following the word Fig. (see the example pages).

16. **Received at ... // Authors' Affiliations:** // 2 columns – Left, Times New Roman, 9pt., Italic; // Right, Times New Roman, 9pt., Italic.

17. **References:** They must be numbered sequentially as cited in the text (e.g. [1], [2] ,..., [7]). The references use Times New Roman CE, 9pt., Normal. Use Times New Roman CE, 9pt., Italic for the Titles. Follow the format given in the example pages. Write the word "REFERENCES" with blanc between letters.

18. Paper length: It is recommended an even number of pages for the paper (**4, 6, 8, ... pages**).

Exemplu:

PROBLEMS THAT MAY OCCUR IN RESEARCH COMPETENCE

BY

*O. ANGHEL

Abstract. The paper presents an educational experience in which teachers and university professors are involved in a training program of developing research competence. They participate in a series of two seminars to identify problems and solutions related to research competence education and training. The topic of seminars was "Creative methods for educational problems". The seminars had two objectives: involving the future trainers in identifying possible problems in the formation of research competence by the three-steps interview method; involving the future trainers in identifying ways to streamline the research competence training students in undergraduate programs and doctoral programs using the creative problem solving method 6.3.5. The research method is autobiography. Qualitative and quantitative analysis of the students' products will support and accompany the autobiographical reflections. We recorded two types of outcomes: achieving a "map" of the issues involved in research competence training and two "drawings" to streamline the research competence training at undergraduate students and doctoral students.

Keywords: research competence, educational experience.

1. Introduction

Autobiography as an investigation method is nowadays employed in several research disciplines. It originates in feminist criticism theories where narrative has both an epistemological and a methodological value given by the fact that personal experience may be a rich source of knowledge and it may be shared and above all theorized. According to Griffiths, it would be more appropriate to use the term "critical autobiography" in research methodology, as it relies both on individual experiences and on theory and especially of a reflection and re-thinking process (Griffiths, 1995).

Over the last two and a half decades, autobiography has enjoyed increasing popularity and legitimacy in curriculum theory, especially in teacher

education. In their essays "teachers collect data and ponder on their experience in order to find arguments to ground the teaching and learning process" (Cochran-Smith & Lytle, 1993, p. 35). These data can be reinvested either in the improvement of their own practices, or in the sharing by other teachers of similar experiences, or in future curriculum development (addressed to both students and teachers as trainers). Let us emphasize here, by quoting two authors interested in this subject, that the goal of autobiography as a research method is to "provoke, challenge, and illuminate rather than confirm or settle" (Bullough, R., Pinnegar, S., 2001, p.20)

2. "Competence" and "Research Competence" Concepts

The team members involved in the "Study on Scientific Research Competence Training Improvement" project have published many articles where they provided extended information on the "research competence" topic. For this paper, we chose a synthetic, simple and direct approach relying on the joining together of the two "research" and "competence" concepts.

According to the Small Encyclopedic Dictionary, 2005, p. 230, the research concept is defined as "an original investigation designed to acquire new scientific or technological knowledge", while the Collins English Dictionary, 1979, defines it as "a systematic investigation designed to establish facts or principles", or as "a systematic investigation meant to collect information on a subject", or as "the investigation of a subject or of a problem" (Collins English Dictionary, 1979, in Javis P., 1999, p.70).

The competence concept has been increasingly used by organizations, be they education institutions or production units. Competence is commonly defined as the best combination of knowledge, abilities and attitudes that a person (who will be or already is employed) imperatively needs in order to be high-performing in a specific field of work. Brugman defines competence as the relation existing between it and performance and states that "competence is a person's ability to be high-performing in specific fields, in particular contexts, in specific circumstances and in precisely defined periods of time." (Brugman, 1999, p.36) There is however another problem that arises – when is a behavior high-performing? How and who decides if this behavior is high-performing or not? Jessup, 1991, p.25, in Hyland, 1994, states that actually competence "does not refer to the lowest or highest performance level but to the standards required for an activity to be considered successful". This supports the idea that competence is not a descriptive but a normative concept (Short, 1984, in Erant, 1994). Before deciding whether a teacher, manager, researcher, etc. is competent or not, it is necessary to know what it means to be a teacher, manager or researcher, what the analysis landmarks are for each competence component, for each profession. Moreover, Jessup makes an interesting distinction between competence in a job and professional or occupational competence. The first type

of competence is limited to the taking in of a role and then its recurrent and even routine application in a specific company or organization. As for professional competence, the person is thought to have abilities, knowledge, etc that he/she is capable of using in a variety of contexts, hence in a variety of organizations. (Jessup, 1991, in Hyland, 1994)

Erant, 1994, makes a finer observation when analyzing the competence concept related to a profession. The author distinguishes between specific and general competence, depending on the type of profession. In some professions, where the work is homogeneous, it is not difficult to determine what specific competence is and what general competence is. For heterogeneous professions, where the work varies depending on the situation, and each professional may excel in one sequence or another, it is advisable to have a set of specific competences clearly stating the aspects that each professional is competent in. In any case, one must bear in mind that the profile of each profession changes very rapidly due to both technology evolution and social and institutional changes.

3. Research Competence Training in thematic Seminar

The concept clarifications synthesized above were the starting point of the seminars where we approached and discussed the problems that may occur in research competence training. We even found possible solutions for two of the problems identified. This was the topic that helped confirming the assumption according to which the use of working methods different from the classical ones increases students' participation and involvement and it provides rich information for possible data analyses.

The seminar was held for two weeks and consisted of two one hundred minute meetings, as it was designed to complete Prof PhD Carcea Maria's lectures. 15 participants – 9 university professors and 6 high school teachers – attended the first seminar, and 12 participants – 8 university professors and 4 high school teachers - came to the second.

The assumption was confirmed by choosing the “three-step interview” cooperative learning method (Kagan, S., 1994) for the first meeting, and Philips 6.6 and 6.3.5 creative problem solving method (A. Munteanu, 1994) for the second meeting, from the wide range of alternative teaching-learning-assessment methods.

You will find hereunder the objectives, actual conduct and results generated by the meetings, all of which were the resources of the presentation to the readers of a challenging teaching experience, since the research method this paper relies on is autobiography.

Start typing the body of your paper here. Papers will outline the issue addressed and research questions, the literature and background to the topic, the analytical frame, the methodology and the research results.

3.1. Seminar objectives and evolution

Objective 1: Classification of the problems faced by students during research competence training, depending on the decision level involved in their solving.

Methods: Teaching exercise, discovery method, three-step interview

Carried out: on small groups

Necessary supplies: post-its of four different colors, pen, individual cards for the interview report

Duration: 100 minutes

Evolution: Step 1: The participants are divided into small 3 people groups and each group member is assigned a “code”: X, Y, Z; the task is the following: “Make an interview of your colleague (X interviews Y, Z watches and takes notes; Y interviews Z, X watches and takes notes; Z interviews X, Y watches and takes notes) in order to identify the possible problems that students may be faced with during research competence training. You will have, in turn, the role of interviewer, interviewed and observer!”; Step 2: “Show your colleagues the interview report you drafted in your capacity of observer!”; Step 3: “Classify the identified problems depending on the decision level involved in their solving – a)ministry; b)university, department; c)trainer; d)student – and write them on your colored post-its (4 colors, one for each case)”; Step 4: “Share the identified problems with your colleagues and draft together the <<problem map>>!”

Objective 2: Using some of the creative problem solving methods to solve three of the identified problems

Carried out: upfront and on small groups

Necessary supplies: paper, pen

Duration: 100 minutes

Evolution: Exercises illustrating the use of the Philips 6.6 and 6.3.5 methods. The groups will solve different problems on the list of identified problems, with the observance of the rules of each method, and then share the results.

3.2. The second order headings Generated Results

3.2.1. Research Competence Training Problems Identified with the Three-Step Interview Method

Five teams were formed and assigned letters in an alphabetical order: team A included both university professors and high school teachers, team B

included both university professors and high school teachers, team C included university professors, team D included both university professors and high school teachers, team E included high school teachers.

Further to their identification by each team, the problems were reanalyzed and included in one of the following categories: problems caused by ministry policies (MP), problems caused by university/ faculty policies (UP), problems having to do with students (SP) and problems having to do with trainers (TP). The problems were written on post-its of different colors and stuck on a board and the “map of research competence training problems” was thus created. Here are the identified problems classified in categories.

a) Problems students are faced with during research competence training caused by ministry policies:

- Answers from team A: “too many students in a study group”, “low wages”, “lack of supplies and equipment”, “curriculum too demanding”
- Answers from team B: “the real problems schools are faced with are not always considered”
- Answers from team C: “financing policy”, “inadequate training”
- Answers from team D: “lack of a clearly stated direction in defining educational process objectives”
- Answers from team E: “lack of specialized teaching staff in some fields”, “lack of jobs in the fields the trainers are trained in”, “lack of financial resources”, “lack of supplies and equipment”, “frequent changes in the education curriculum”

b) Problems students are faced with during research competence training caused by university/ faculty policies:

- Answers from team A: “pressures to attract and then preserve the highest possible number of students, which leads to poorer teaching-learning process quality”, “insufficient supplies and equipment”
- Answers from team B: “lack of supplies, equipment”, “high number of students in a study group”, “no information sources”, “no policy designed to get students involved in research” (in the faculty projects, together with the researchers)
- Answers from team C: “disagreement between disciplines”, “much too many students in a study group”
- Answers from team D: “lack of procedures in the quality manual for this competence”, “not enough sources (programs) of information and investigation”
- Answers from team E: “lack of implementation of the ISO 9001 quality program”; “lack of financial resources”.

c) Problems students are faced with during research competence training and that have to do with students:

- Answers from team A: “lack of motivation”, “they do not get involved

in research”, “moderate study level”, “sometimes limited intellect”

- Answers from team B: “lack of motivation; the teachers/professors get very involved without receiving positive feedback each time”, “they do not appreciate the value and efficiency of their teachers/ professors”
- Answers from team C: “lack of interest”
- Answers from team D: “lack of motivation”, “individual limitations (inability to adjust)”, “lack of basic knowledge”
- Answers from team E: “the way theoretical training is conjugated with practical requirements”, “lack of enthusiasm for their profession”

d) Problems students are faced with during research competence training and that have to do with trainers:

- Answers from team A: “inadequate teaching methods”, “some of them have problems understanding the theory”, “poor training of some of the teachers” which leads to “lack of interest from the students”, “no updated information sources”, “moderate student level”, “no patience”
- Answers from team B: “students are not aware that they also train such skills”, “prefer theory to practice; they train rather cognitive than aptitudinal skills”, “lack of professional trainer expertise”, “lack of motivation for research competence training”
- Answers from team C: “they fail to stimulate individual study in students”, “professor-student interrelation”
- Answers from team D: “conflict between generations”, “student-based education versus teacher-based education”, “subjectivity”, “lack of motivation”, “imposes limitations”, “lack of connection between theory and practice”
- Answers from team E: “poor professional training in graduates”

Three-step interview was the work method appreciated by the participants, thus proving once again its ability to collect a considerable amount of data in a short period of time (Tabel no.1). This supports our initial assumption.

Table 1 *Quantitative result analysis, on groups and categories of problems*

	problems caused by ministry policies	problems caused by university/ faculty policies	problems having to do with students	problems having to do with trainers	Total
Group A	4	2	4	6	16
Group B	1	4	2	4	11
Group C	2	2	1	2	7
Group D	1	2	3	5	11
Group E	5	2	1	1	9
TOTAL	13	12	11	18	

3.2.2. Solutions for Research Competence Training Improvement by the Use of the 6.3.5. Creative Problem Solving Method

In accordance with the specificity of the method, teams of 6 participants were formed and they were each asked for three solutions to an educational problem and for interventions in the solutions of the other team members: team A, formed of university professors, had to identify ways of improving research competence training of PhD candidates, while team B, formed of 2 university professors and 4 high school teachers, had identify ways of improving research competence training of undergraduates.

A quantitative result assessment reveals that the first team provided 15 solutions, as 3 participants offered three solutions each, and 3 participants offered two solutions each. There were also 31 active interventions, 30 of which were answer completions, and only one was a disagreement with the initial solution.

The second team provided 14 solutions, as 4 participants offered three solutions each, one participant offered two, and another one none. There were also 11 active interventions, and all of them were answer completions, without any criticism or disagreement with the given answers.

Here are some of the answers resulted after the application of the five rotations:

- “Access to documentation materials / possibly full computerization of the faculty libraries / access to the documentation of other similar universities / frequent experience exchanges / sponsoring of subscriptions to prestigious publications”
- “Better interaction between PhD candidates and PhD thesis coordinators / exchanges of ideas and involvement of the PhD candidate in the professor’s projects / the PhD thesis coordinator to provide the initial documentation to the PhD candidate”
- “Research scholarships in properly equipped laboratories / research result dissemination into practice / result publication”
- “Defense of the PhD thesis in a university different from the one where the thesis was written in order to increase responsabilization / defense of the results of the research before a board of examiners including at least one foreign specialist; at least 3 rounds of questions; it should not be just a formality / good idea”
- “Creation of research teams including 2- 5 PhD candidates and common defense of the final thesis (on a considerably complex topic) / study of individual issues different from the topic / ministry financing of dedicated grants / possibly cooperation with some companies”
- “Experience exchange and example presentation / symposiums held

especially for students”

- “At least one 6 month scholarship in a prestigious university abroad / experience exchange”

In the teaching staff’s opinion, the improvement of the research competence training for PhD students relies a series of specific *topics*: true cooperation with the PhD thesis coordinator, access to national and international resources, access to scholarships abroad, work in teams of students on independent pieces of the same topic.

Here is a list of ways to improve research competence training of undergraduates in the teachers’ and professors’ opinion:

- “Engineer profession simulation in the faculty laboratories by solving concrete production cases, by sharing the expertise of engineers involved in production / experience exchange”
- “Optional courses designed to train their research competence”
- “Stimulation of exceptional undergraduates – organization of specific promotion programs”
- “Choosing work topics designed to force them to develop their research competence / related to their future work in production”
- “Team work to debate on the problems they are faced with throughout their common projects / more availability from the teaching staff and the students”
- “Guidance towards research fields that will first be approached individually and then corrected by a tutor / expertise sharing by the graduates that also have practical experience”

In the professors’ opinion, the solutions of improvement of the research competence training of undergraduates should consist of practical activities conducted under the close supervision of a professor.

4. Conclusions

What I was interested in during the seminars subjected to (self)criticism in this paper were both the didactic implications of the two main methods – three-step interview and 6.3.5.- and the professors’ perception of the problems and solutions related to research competence training. Our initial assumption according to which alternative methods urge participants to get involved was confirmed and supported by the quantitative analysis of the participants’ creations. The qualitative analysis also supports this and reveals interesting information.

The Philips 6.6 and 6.3.5 creative problem solving methods were also appreciated by the students, just like the working methods, and generated extremely lively debates. We are however reticent as concerns data collection and use for qualitative content analyses, due to the difficulties related to achieving the highest accuracy of the method. The answers were often left

unfinished by the team members, and their appreciations, corrections, completions required by the specificity of the method were evasive.

In the teaching staff's opinion, decision-making institutions are very little involved in research competence training of students or pupils. The ministries have much more important issues on the agenda. The "school curricula are much too demanding" and they focus almost exclusively on the goals of the main specialty, leaving little room for explicit research competence training.

Our purpose was to raise awareness to the fact that research competence may be developed both if the teacher/professor chooses the attainment of those goals and by activating human inclinations to research.

At the institutional level, the problems have to do with the financial or material resources. In the professors' opinion, the pressures related to the progressive increase of the number of students, which means that they have to work with larger study groups, are responsible for lower quality education and implicitly for difficulties in properly approaching research competence training. If research competence is necessary for specific projects, the training is superficial.

Some of the participants to the seminars notice "the lack of procedures in the university quality manual related to the training of this competence", which lets us understand that developing research competence in students, regardless of their education level, is not a priority for universities either.

The problems related to research competence training chain up: lack of involvement of the ministry, lower quality education due to the pressures related to the progressive increase of the number of students, increasingly numerous students that are often not dedicated to the profession they are trained for, professors often disappointed by the students' feedback to their work.

The opinions of the teaching staff regarding research competence training are important especially for those involved in the development of the research competence trainer training curriculum. The answers may be evaluated in order to complete the set of solutions to the problems raised by the improvement of research competence training, especially since, given the low number of educational policies related to this issue, the professors are those who make possible the development of such competence in their students.

Aknowledgements: I wish to express my gratitude to Ph Carcea Maria, for mastery with which she guided me in my research.

Received at 1th of October 2013

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PROBLEME CE POT APARE IN FORMAREA COMPETENTELOR DE CERCETARE

(Rezumat)

Scopul lucrării de față este acela de a prezenta o experiență educațională în care cadre didactice preuniversitare și universitare implicate într-un program de formare al formatorilor de competențe de cercetare participă la o suită de seminarii corelate identificării de probleme și apoi de soluții legate de formarea competenței de cercetare. Ne vom focaliza asupra seminariilor ce au avut drept temă: „Metodele creative în rezolvarea problemelor educaționale”. Seminariile au vizat două obiective: implicarea viitorilor formatori în identificarea de posibile probleme în formarea competenței de cercetare prin apelul la metoda interviului în trei trepte; implicarea viitorilor formatori în identificarea unor modalități de eficientizare a formării competenței de cercetare la studenții din programele de licență și studii doctorale prin apelul la metoda de rezolvare creativă de probleme 6.3.5. Numărul participanților la cele patru sesiuni a variat de la 12 la 15, din mediul preuniversitar aderând 6, iar din cel universitar 9. Metoda de cercetare pe care se bazează lucrarea de față este autobiografia. Analiza calitativă și cantitativă a produselor studenților va susține și însoți reflecțiile autobiografice. Am pornit cu ipoteza conform căreia metodele de lucru în seminarii alternative celor clasice aduc o participare implicată a studenților la activități și informații bogate pentru posibile analize de date. Am înregistrat două categorii de rezultate: realizarea unei „hărți” a problemelor implicate de formarea competențelor de cercetare și a două „schițe” de eficientizare a formării competențelor de cercetare la studenții studiilor de licență și doctorat.