

Determine Current and Future Demands on Human Resources Training and Development Branch "CREIR CF" Constanta

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Abstract: We conducted a research applied because one of the problems encountered by management transport railway is average age higher of the positions personnel senior and lack of qualified personnel in positions of execution.

With a view to assessing present and perspective exigencies concerning the training and improvement of railway staff, it has been carried out, within the National Company CFR SA, Branch Infrastructure of Constanta, a study with exploratory and explanatory nature in the first phase was initially identified the current level of professional training and then, in the second phase, to analyse the improvement need of the trainers of this institution, as a direct consequence of the low level of the training activity management of the staff in charge of railway traffic safety.

This issue presents methodology and results of training activities and training their staff in Branch "CREIR CF" Constanta, in order to highlight good practices in this area of human resource management solutions and best separation efficiency and competitive development railway public sector using performance improvement programs.

Keywords: human resources, rail transport, training and professional development, questionnaire

Introduction

The system to maintain professional abilities for the railway personnel in Europe is brought under regulation through the European Qualifications Framework - EQF (European Qualifications Framework for lifelong learning), which is a reference frame that facilitates lifelong learning. Referring to permanent training, this instrument defines the following terms [3, 1258-1260]:

- *professional ability* represents proven capacity to use knowledge, abilities and personal, social or methodological capacities during work or study;
- *knowledge* represents the result of information absorption through study. These are the totality of facts, principles, theories and practices related to a certain work or study field.
- *abilities* are the capacity to apply and use knowledge to accomplish tasks and to solve problems. Abilities are described as being *cognitive* (implies the use of logic, intuitive and creative thinking) or *practical* (implies manual dexterity and the use of methods, materials, tools or instruments).

According to a renowned specialist for the organization, investment is the main way to increase wealth and thus the market value of its assets and one of the most important forms of investment is the investment in human resources training and development [4, 44].

To maintain and develop professional abilities at a high qualitative level and in the purpose of respecting requirements concerning railway safety, they imposed through Ministry of Transport Order 590/2010 [5] that the personnel with responsibilities in traffic safety, as well as other categories of personnel that carry on activities specific in railway transport operations in Romania, be comprised and integrated in a professional abilities maintaining system, that represents the minimal framework necessary to accomplish objectives of railway traffic safety and includes the totality of permanent professional training programs in the railway field.

Hypothesis of research: the correct, complete, efficient and opportune assessment of railway personnel, represents the essence of the operational maintaining system of human resources

professional abilities in railway transport area, central element of the passengers and merchandise traffic management system.

Figure 1 presents the integrated pattern of the logical schema related to the already mentioned research.

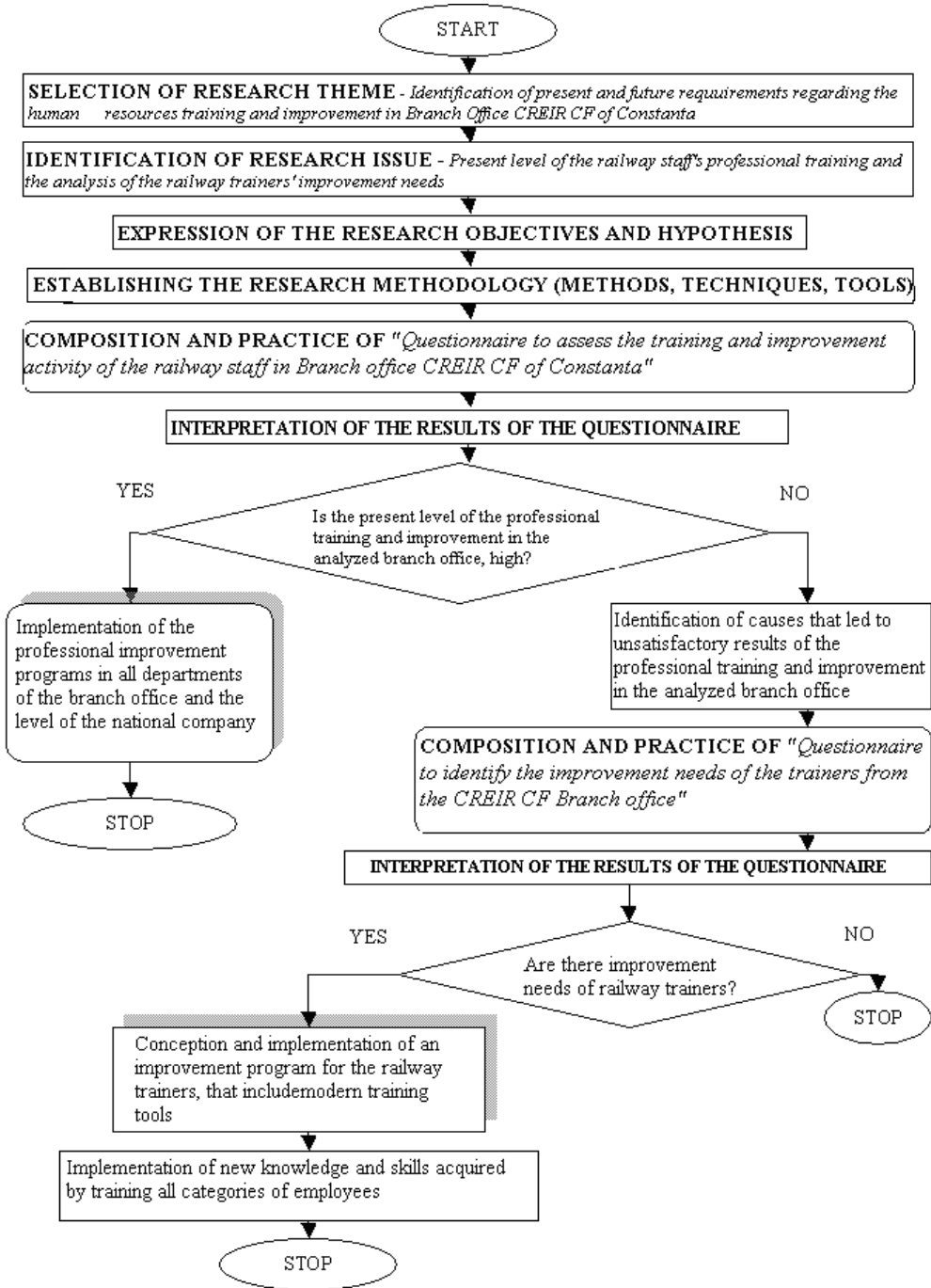


Figure 1. Analysis integrated pattern of professional training and improvement

The general objective of the study was represented by the assessment of the personnel training and improvement activities in the Locale Infrastructure of Constanta, in order to highlight the good practices existent in this field of the human resources management and the separation of the best solutions of efficiency and public sector railway, competitive development using advanced improvement programs. The study conducted to:

- a permanent training analysis of the railway personnel through professional training assessment and its performances;
- a professional ability determination of the trainers from divisions and quarters of Locale Infrastructure of Constanta;

- an identification of professional training and improvement conditions of the employees with responsibilities in the railway safety and their alignment to the perspective requirements regarding work quality in traffic safety and railway transport security;
- a formulation of recommendations regarding future politics in human resources professional training and improvement, that would lead to a better adaptation of the railway company to the internal and external environment constraints and turning them into opportunities.

1. Search Methods

Methods used in research are:

- **inquiry**, used to test hypothesis; two inquiries were carried out, questionnaires-based, that have been applied to persons with management jobs within services with responsibilities of personnel training and improvement within Locale CFR of Constanta, to trainers from all training centres under the locale and to station chiefs of Constanta-Mangalia traffic quarter;
- **direct observation**, through improvement sessions participation in the training centres in Constanta and Mangalia and the weekly work meetings that the regional director has had with the division chiefs, at the Local CFR headquarters of Constanta, where the present ones got questionnaires with the purpose of obtaining preliminary information to the study;
- **indirect observation** based on documents through the study of datasheet assessment of each individual's professional performances and of training portfolio for the jobs with railway safety responsibilities, existent in the archive of the Control Access Infrastructure service within Traffic Division of Constanta. The study was fulfilled preponderant on the employees of this division, because the central subunits are part of its organisational structure, in which works the most part of the personnel with jobs and majors that need integration in the professional abilities maintaining system through permanent training in the railway field.

Used research techniques were:

- **managers' inquiry** that are responsible of human resources training and improvement from Locale CFR of Constanta, inquiry of trainers from all training centres under the locale and of station chiefs of Constanta-Mangalia traffic quarter;
- **interviewing**, in order to collect additional information, to which the persons interviewed couldn't answer because of the limited character of the questionnaire; it was used the unofficial interview because this type of interview offers the interviewer the liberty to change the order of questions, to explain their meaning, to add supplementary questions and even to adapt the questioning to situations and to the person he faces.

Used research instruments:

- the form "*Questionnaire no.1 assessing the training and improvement activity towards railway staff of CN CFR S.A. Branch of Constanta*" [2] was used firstly in the research to determine the qualitative level of the professional abilities maintaining system through human resources training and improvement activities from the Branch CFR of Constanta. The questionnaire included closed questions, their variables being evaluated with different scales of Linkert type.
- the form "*Questionnaire no.2 to identify the railway trainers' needs of improvement from the Branch office CREIR CF of Constanta*" [2] was used in the second phase of the research, as a consequence of the result obtained in the previous phase; the use of the second questionnaire also meant a way to obtain information that could be used to offer further recommendation concerning future policy over railway human resources professional improvement.

The research was conducted during March-May 2011.

2. Results and Discussions

In the first questionnaire, information was asked to all employees from the department of Human Resources from the locale (6 persons), to the managers of the locale from the hierarchical levels of all activity sectors where there are responsibilities of planning, organizing and control of the activities of

training and improvement (14 persons), to the trainers of all training centres (16 persons) and to the station chiefs from the traffic section, representative in terms of staff needed to be integrated into the system of maintaining the professional competences (9 persons). It was planned to collect data from 45 persons and 44 persons complied with the request, 40 questionnaires were validated, 4 with non-response and a refusal. The questionnaire includes 14 questions.

The content of the questionnaire was based on four objectives derived from the overall objective of the study and it includes fourteen items. These objectives are:

- **objective one:** the interest expressed by the managers from different hierarchical levels regarding the training and the improvement of the employees, including for the career's plans, through the first items 1-4;
- **objective two:** the existence of proper methodologies of continuous training for the railway staff, through the following items 5-7;
- **objective three:** evaluating the programs of professional training through items 8-10;
- **objective four:** identifying the way of evaluating the professional performances of the managers and of the executive staff, through items 11-14.

The rating scale was constructed by starting with the following considerations:

After discussing with the regional director, with the chief of RU service and with the manager of CENAFER Constanta Centre, degrees of importance were assigned to the four established objectives, as follows:

Objective one – medium importance
Objective two – minimal importance
Objective three – maximal importance
Objective four – medium importance

In determining the degrees of importance of the objectives, it was started from the following **premises**:

- training and improving the staff hired in a company like CN CFR SA is compulsory through Ord. MTI no. 590/2010, therefore, this objective was given a medium importance;
- to the second objective, continuous training, minimal importance was assigned, because the importance of the quality of the training programs is superior to their number and frequency;
- the objective three got a maximal importance as it was considered necessary using some advanced training programs;
- to evaluate the staff performance, as a final objective, it was opted for medium importance, because a fair and objective evaluation motivates positively the employees and it leads to rivalry towards the activities developed, but the individual performance of the employee is not determined by the continuous training, by the qualities and commitment towards his job, as much as by the quality of the training programs.

The established objectives were correlated with the following situations and scores:

- **the ideal situation** marked with **A** got 10 points, regardless the item's type;
- **the favourable situation** marked with **B** got the following score: 7 – for an item of minimal importance; 8 – for an item of medium importance and 9 – for an item of maximal importance;
- **the disadvantaged situation** marked with **C** got the following score: 4 – for an item of minimal importance; 5 – for an item of medium importance and 6 – for an item of maximal importance;
- **the critical situation** marked with **D** got the following score: 1 – for an item of minimal importance; 2 – for an item of medium importance and 3 – for an item of maximal importance.

Depending on the nature of the questions contained in the objective, we make the following statement: the answers from the questions regarding the situations B, C, D from all the questions in the questionnaire, were scored according to the importance of the objective where they were situated. All the possible situations are presented in table 1. For example, the letter B circled at a question from an objective with medium importance, obtained medium score, meaning 8 points from the possibilities

related to this category of situations – seven, eight and nine, and the letter D circled at a question from an objective with maximal importance, got only three points, from possibilities one, two and three.

Table no 1

The scores of the questions correlated with the importance of objectives

Interpretation		Items	
Questions	5-7	1-4 10-13	8-9
Answer	Minimal importance	Medium importance	Maximal importance
B	7	8	9
C	4	5	6
D	1	2	3
A	10	10	10

Regarding the way of using this questionnaire, the following comments are made:

- it was marked at every question, distinctively by bolding the letter A to identify *the ideal situation*. The letters A, B, C, D correspond to the order given by the sequence of the variables which represent the answers of each question of the questionnaire;
- each respondent who completed the questionnaire, checked one of the letters A, B, C, D to identify what he considered to be *the real situation* within the analysed locale;
- the answers obtained from the questionnaires were centralized and then interpreted, by calculating the percentage of the answers that overlapped over *the ideal situation*, in relation with the total number of questions which received answers.

Interpreting the final results, obtained using data from Tabel 2, was realised with a Linkert scale type, by *converting the percentage obtained in marks from one to ten*, with the ratings:

- Very weak – for marks one and two;
- Weak – for marks three and four;
- Sufficient – for marks five and six;
- Good – for marks seven and eight;
- Very good – for marks nine and ten.

To obtain the final rating and the four objectives, the following steps were browsed:

- a. The maximal possible score was calculated, related to the ideal situation, according to the formula:

$$TPM = NRI * PCT * R \quad (1)$$

where: TPM = total maximal score, NRI = the number of items from the questionnaire, PCT = maximal score related to the ideal situation, R = the number of respondents.

$$TPM = 14 \times 10 \times 40 = 5600 \text{ points}$$

- b. The score related to the real situation was determined according to the formula:

$$TPR = \sum PIR \quad (2)$$

where: TPR = total real score, PIR = real individual score related to each respondent

$$TPR = 2628 \text{ points}$$

- c. The final rating was identified by converting into mark the percentage obtained according to the formula:

$$\text{Final rating} = \frac{TPR}{TPM} \times 100 \quad (3)$$

$$\text{Final Rating} = 2628/5600 \times 100 = 46,93\% = \text{MARK FIVE} \rightarrow \text{SUFFICIENT}$$

- d. The ratings related to each objective were identified, according to the formula:

$$TPO_i = \frac{TPRO_i}{TPIO_i} \times 100, \quad i = 1,2,3,4 \quad (4)$$

where: TPO_i = total score for objective I, TPRO_i = total real score for objective I, TPIO_i = total ideal score for objective i.

TPO1 = 810/1600 * 100 = **50,62%** = MARK FIVE -> Rating **SUFFICIENT**
 TPO2 = 585/1200 * 100 = **48,75%** = MARK FIVE -> Rating **SUFFICIENT**
 TPO3 = 498/1200 * 100 = **41,5%** = MARK FIVE -> Rating **WEAK**
 TPO4 = 744/1600 * 100 = **46,5%** = MARK FIVE -> Rating **SUFFICIENT**

Table no 2

Summary of the questionnaire for evaluating the activities of training and improving the Railway staff from Branch Infrastructure Constanta

Respondent/Items	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	Total	Ob	
1.	8	2	10	2	2	2	5	8	5	5	2	5	2	5	2	5	5	5	5	2	8	2	8	5	2	8	8	2	5	5	2	5	8	2	5	8	2	5	2	8	187	46,8	
2.	5	5	8	2	8	2	5	5	5	8	8	5	8	5	2	5	5	5	5	8	8	5	8	5	2	10	8	8	5	5	5	10	8	5	5	8	2	2	5	8	231	57,8	
3.	2	5	2	2	8	8	8	5	10	5	8	5	5	2	8	8	8	8	5	2	8	5	5	2	5	10	8	2	2	5	5	8	2	2	2	10	5	10	2	5	217	54,3	
4.	5	8	2	10	5	5	2	8	8	2	2	2	2	5	5	2	2	8	5	8	5	5	5	2	2	5	8	5	8	2	2	2	2	5	2	2	5	2	5	2	175	43,8	
TOTAL O.B.1	20	20	22	16	23	17	20	25	28	20	20	17	17	17	17	20	20	26	20	20	29	17	23	14	14	36	29	20	20	17	14	25	20	14	14	28	14	19	14	23	310	60,8	
5.	7	7	4	4	4	10	1	7	4	4	4	4	4	4	1	7	4	4	7	7	4	4	10	4	7	1	4	7	1	4	1	4	7	7	4	7	1	4	1	7	187	46,8	
6.	4	7	4	7	4	7	7	4	7	7	4	7	4	7	7	4	7	7	7	7	7	7	7	7	7	4	4	7	4	4	7	4	10	4	4	4	4	7	7	232	58		
7.	1	4	7	1	4	7	7	4	4	4	4	7	1	7	4	7	7	4	4	1	4	1	4	4	4	1	4	4	7	7	7	4	1	1	4	1	7	7	4	1	166	41,5	
TOTAL O.B.2	12	18	15	12	12	24	15	18	12	15	12	18	9	15	12	21	15	18	15	15	12	21	15	18	6	12	18	12	15	15	12	15	12	18	12	12	15	12	15	326	48,8		
8.	6	3	3	6	6	3	3	6	6	3	6	3	6	6	3	3	6	3	3	3	3	3	3	6	3	6	3	6	6	3	6	3	6	3	3	3	3	3	6	3	165	41,3	
9.	3	3	3	3	3	6	3	3	3	3	3	3	3	3	9	3	3	3	6	9	3	3	3	3	6	3	3	3	3	6	3	3	3	3	6	3	3	6	3	6	153	38,3	
10.	3	6	3	6	3	3	6	9	6	3	6	3	6	3	6	3	6	9	3	6	3	3	3	3	3	3	3	3	3	3	3	3	3	3	6	9	6	6	3	6	180	45	
TOTAL O.B.3	12	12	9	15	12	12	9	12	18	12	12	12	12	12	18	9	12	12	12	18	15	9	12	12	9	12	12	12	12	12	15	9	12	3	15	15	12	15	12	488	41,5		
11.	8	2	2	8	5	8	5	8	5	10	2	2	8	2	5	2	5	2	10	2	5	8	2	2	10	5	8	2	5	2	5	2	5	2	2	5	5	2	2	5	185	46,3	
12.	5	8	5	5	5	8	5	5	5	2	2	2	5	8	8	5	2	5	8	5	2	8	8	5	2	5	2	2	5	2	8	5	5	5	5	5	2	10	5	8	5	202	50,5
13.	2	2	5	5	2	2	5	8	2	5	2	2	2	8	5	2	8	2	8	2	8	10	2	5	2	5	5	5	2	2	5	5	2	8	5	2	5	5	8	8	178	44,5	
14.	8	5	2	5	2	5	2	2	8	5	5	5	8	8	2	8	5	5	2	2	2	2	5	8	5	2	5	8	2	2	2	5	5	5	5	5	5	5	2	2	5	179	44,8
TOTAL O.B.4	23	17	14	23	14	23	17	23	20	22	11	11	23	26	20	17	20	14	28	11	17	28	17	20	19	17	20	17	20	8	20	14	17	20	17	14	25	14	20	23	744	46,5	
TOTAL	67	67	60	66	61	76	61	79	73	69	65	58	61	70	67	67	67	67	73	64	76	66	73	61	60	71	73	67	64	62	61	66	61	58	62	69	66	60	61	73	2828	48,8	

The results obtained highlighted the fact that the railway personnel training and improvement activities from the Locale Infrastructure of Constanta is accomplished at an acceptable level which must be improved, especially through development of training programs, the identification of present needs to improve their own trainers and the exigency increase in performance assessment of all personnel categories with responsibilities in railway traffic safety.

Because a low rating was obtained for goal number three, which means that within the Locale analyzed, there are an insufficient range of permanent training programs of the railway personnel, and also training methods and techniques which are not upgraded to the new work requirements, the study continued by applying the second questionnaire to all trainers and station chiefs from the representative division at regional level, in order to identify the causes that led to the negative result achievement regarding the railway personnel training and development activities.

The diagnosis and the assessment of training activities and professional improvement using own qualified personnel, were achieved through the implementation of the second research tool, that is "Questionnaire no.2 to identify the railway trainers' needs of improvement from the Branch office CREIR CF of Constanta". I laid out data collection for twenty-three people, being mentors with training attributions from all training centers of the branch office and station chiefs of traffic station Constanta-Mangalia. All people responded to the requisitions, 20 questionnaires being validated, noting three non-answers, because of partial or incorrect filling in.

In the second part of the study, carried out on the staff segment with direct training and improvement attributions of human resources, *questionnaire no.2* was applied and it established a series of objectives that meet the general objective of the study, that is:

- **objective one:** the quality of professional training of the instructors responsible for the railway staff training through items 1, 2, 3, 4, 5, 6, 7, 22, 23 and 24;
- **objective two:** trainers availability to improve themselves and to accept the participation of foreign experts inside the employees' training process, through items 8, 9, 10, 11, 14, 16, 17, 18;
- **objective three:** the quality of the training and improvement activity organisation of the railway staff through items 12, 13, 15, 19, 20, 21.

From the analysis of the questionnaires applied to the responders, by calculating the weight of every answer which was the responder's option, all told the number of respondents, a series of aspects was highlighted, described as follows.

Regarding the basic training, 75% of those interviewed, have secondary education and 20% have advanced studies, mostly coming from the urban environment, 60% aged between 40 and 50 years old, 50% of which 60% men and 40% women. Most of the trainers have a seniority of between three and ten years 40%, and have not been teachers before, 85%. Among the people questioned, 55% consider themselves well professionally trained, 25% considering being medium trained.

Psychological factors (intrinsic and extrinsic), the ones related to the individual's will, to achieve in life whatever he proposed, have underlined for the intrinsic factors two essential characteristics of the human being: self-confidence and organisational spirit with 18.3%, being on the first place, followed by intelligence 6.6%, originality and professional imagination 15%. For the extrinsic factors (the ones that help the individual from the outside) the leader position was taken by the experience 20%, the second position was occupied by the vision on the railway field 18.3% and professional training 15%. The intrinsic factors that the most of the responders would like to own, are perseverance and consistency 31.6%, authority and firmness 28.3% namely labour power 20%. The extrinsic factors that would help them in their activity are: the collectivity which they work with 21.6%, money 18.3% and the friendly terms with the work colleagues 15%.

The study shows a trainers' opening towards improvement, 60% of them being sure that this fact would reflect positively in their activity. A field where most would want to dedicate themselves to is the projects management 20%, which would bring the necessary money for the company's modernization. Other aimed areas are international transportation agreements 18.3% and railway transports management 16.6%. Also the training staff is willing to specialize in connected fields, as shown in the data presented in figure 2. The most important areas are: informatics 26.6%, human resources 20%, foreign languages 18.3% and communication 16.6%, which would assure them a fitting training to the new exigencies, imposed by the directives of the European Union and the national legislation in the railway field.

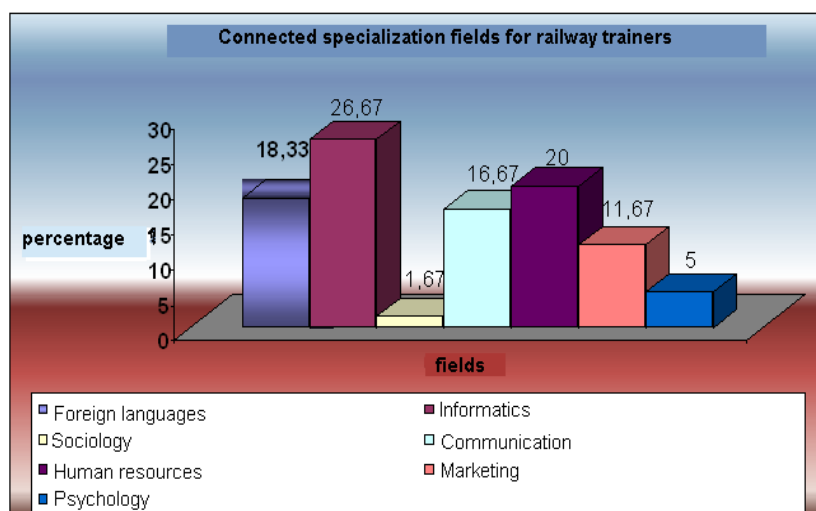


Figure 2. Connected fields to the basic activity where the railway trainers wish to specialize

Regarding the organisation manner of the training activity, most of the trainers agree that the most useful forms are those based on training modules 22.5%, consultancy 15% and workshops 12.5%. The weights of methods used in teaching classes by railway trainers are presented in figure 3, the most used methods, as appeared in the figure: the case study 30%, the lecture 21.6%, the debate 25% and the project 20%.

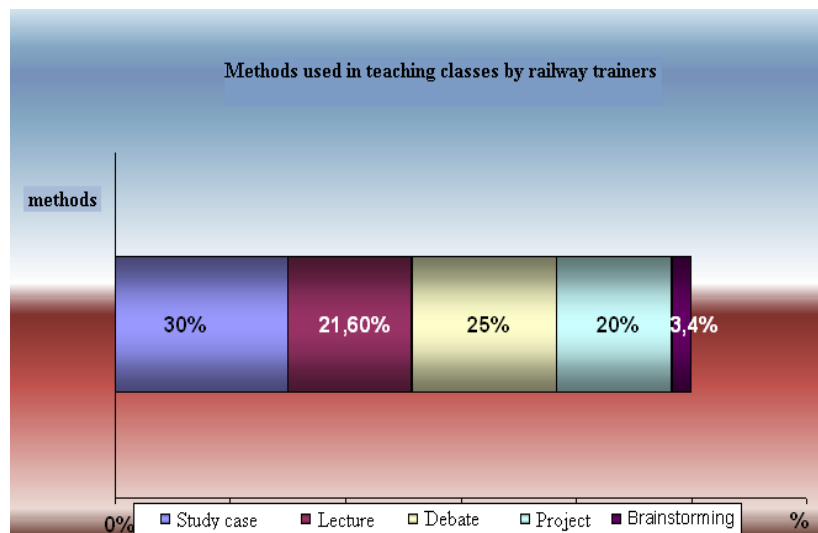


Figure 3. Methods used in teaching by railway trainers

The necessity to maintain it operating comes from the paucity of appropriate qualified personnel on the labour market. This opinion is sustained also by the hiring carried out in the last period of time by the private operators of railway transport that have rehired retired personnel from the state railway companies. From this perspective, we point out the need to increase the number of qualified employees in railway transport. Otherwise, railway transport will face a shortage of qualified personnel similar to the one in the construction area [1, 52-54].

Conclusions

The hypothesis delivered at the beginning of the research was validated by the results obtained after the practice of questionnaires and interviews with the managers that have direct missions in the continuous training of the railway staff pertaining to the Branch office "CREIR CF" of Constanta.

Based on the research carried out for the documentation of this paper, we consider as being necessary the increase of the number of persons taking part in the railway area training classes. This necessity becomes imperative in order to satisfy the exigencies of perspective that derive from putting into service the new rolling stock, the modernization of different facilities, equipment or elements of the railway infrastructure and the use of a new organization system of trains traffic. In the author's view the sum of present exigencies referring to the railway staff training, which anticipate future requirements in the area, is presented in figure 4.

In railway field, the number of persons that participate in professional training is relatively poor. Nowadays, in front of the employees continuous professional training form the railway transportation system, there is still a series of obstacles and barriers that lead to a weak participation and decreased investments in this line. *Insufficient participation* in the continuous professional training is determined by the large period of training in view of acquiring a complete qualification, by the lack of correlation between acquired qualification in the formal system and the one acquired in the non-formal and informal systems referring to recognition of skills, as well by wrong perception of railway transport public and private operators that see the professional training expenses as a cost and not as an investment.

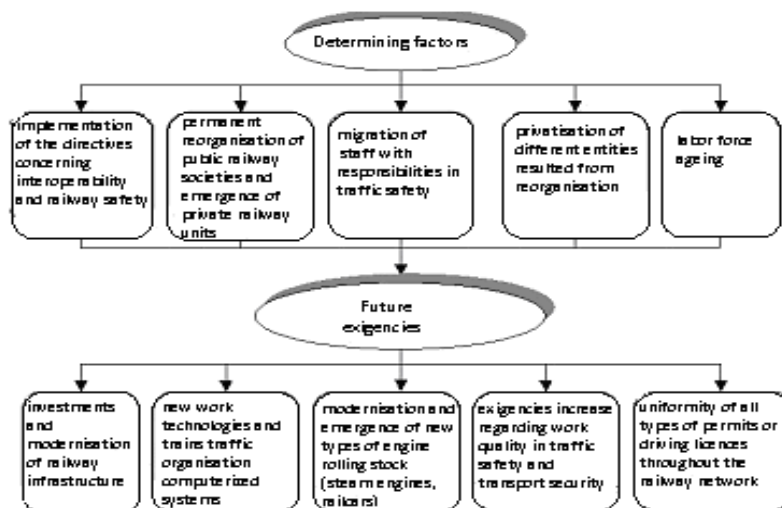


Figure 4. Present and future exigencies that determine the continuous training of the staff of CFR

Regarding the *insufficient quality* in providing continuous professional training services, the difficulties met, refer to:

- insufficient institutional capacity for founding, implementation and monitoring continuous training policies inside Branch office “CREIR CF” of Constanta;
- existence of a weak institutional trainer of public provider of continuous professional training in transportation on railway system; private providers network of railway professional training is insufficiently developed nationally and does not cover properly all activity areas;
- existence of a licensing system of professional training providers with focus on entries control to the disadvantage of the control regarding results.

Professional training and qualification realised in territorial centers of CENAFER for the entire personnel that contributes to the railway transportation putting into practice in safe railway conditions, are to be continued appropriately through training activities and permanent improvement, sustained by trainers who work for the public railway companies by using modern teaching and evaluation methods and means for professional skills in the railway area. One of these means is characterised by putting into practice the most modern railway traffic management simulator in Romania, through which they intent to bring a change of mentality related to professional training, in the purpose of the increase of acknowledgement degree concerning the importance of permanent teaching, of the degree of motivation to expand knowledge and individuals skills development.

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Supplementary recommended readings

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