

CATALYZING COACHING: TEACHERS' PERCEPTIONS ON THE CONNECT PROJECT'S DEVELOPMENTAL PATHWAYS

Ana Maria Aurelia PETRESCU¹, Gabriel GORGHIU², Mihai BÎZOI³

¹Assoc. Prof., Ph.D., Valahia University of Targoviste, Targoviste

²Prof., Ph.D., Valahia University of Targoviste, Targoviste

³Assoc. Prof., Ph.D., Valahia University of Targoviste, Targoviste
ROMANIA

E-mails: ¹ana.petrescu@valahia.ro, ²gabriel.gorghiu@valahia.ro, ³mihai.bizoi@valahia.ro

ABSTRACT

Coaching is generally understood as a collaborative learning and development process between a coach and a client, aimed at unlocking the client's own potential rather than transferring predefined knowledge or expertise. Within the framework of the CONNECT project, coaching provides structured, step-by-step support for Romanian teachers implementing science-focused educational partnerships and action units. The present paper examines the perceptions of 20 Romanian teachers participating in the project's piloting phase to evaluate the effectiveness of the coaching activities carried out and to propose optimizations for future stages. A mixed-methods approach was used: data were collected through an online survey questionnaire and a focus group, covering teachers' feedback on training impacts, student professional development, relationship quality, coaching strategies, time management, and expectation alignment. Data were processed using both quantitative (statistical) and qualitative (appreciative) methods. The results indicate a high level of satisfaction - all the respondents rated the coaching activities' contribution to students' science education and to their own professional development as either great or very great extent, with no negative ratings recorded. Teachers' own achievements were similarly positive, and coaching strategies, relationship quality, and time management were consistently rated in the upper range of the satisfaction scale. These findings offer a realistic, evidence-based foundation for optimizing future coaching configurations, starting from the framework established within the CONNECT project.

Keywords: coaching, science action units, teachers' perceptions, CONNECT project.

INTRODUCTION

In general, the term coaching defines a process of learning, training, and development, based on a partnership relationship established between client and coach with the aim of facilitating this process, making it faster and more effective (SkillsYouNeed,

2022). Whitmore (2009), an author with substantial contributions to the field, describes coaching as “unlocking a person’s potential to maximize their own performance,” adding that it represents “a way of managing, a way of treating people, a way of thinking, a way of being.” In recent decades, coaching has been used both in personal development and life issues (life coaching) and in professional fields such as education, sports, music, business, theatre, and public speaking, representing a development method that allows addressing change needs in a short time and facilitates greater personalization of change interventions (Gavrilă, 2014).

Despite the growing use of coaching across educational contexts, most existing research in this area remains limited to case studies and tests of methodological frameworks, with fewer studies examining how teachers themselves perceive the effectiveness of coaching received within structured, project-based interventions (Rațiu, & Baban, 2020). This gap is particularly relevant for science education initiatives, where coaching is increasingly used to support teachers in adopting inquiry-based and open-schooling practices, yet evidence on its perceived impact remains scarce.

In the vision of the CONNECT project, coaching implies a series of activities with a supporting role, which the coach provides in a step-by-step manner to the participating teachers to successfully implement the science action units and educational partnerships.

Coaching activities involve a working strategy (one-to-one) based on dialogue and communication aimed at identifying effective solutions to the problems faced by the beneficiary. Essentially, coaching represents a synthesis of successful principles, methods, theories, and techniques focused on management, personal development, and performance support.

Figure 1 offers a visual synthesis of how coaching can be distinguished from related developmental and helping practices. The International Coaching Federation (ICF, 2025) defines coaching as a partnership that relies on a non-directive, inquiry-based process in which the client generates their own solutions, in contrast to consulting, which is expertise-driven and solution-prescriptive, or mentoring, which draws on a more experienced individual's personal experience (Cox et al., 2010).

Training and teaching are similarly distinguished by their reliance on structured curricula or explicit instruction, whereas coaching does not transmit predefined content (Cox et al., 2010).

Therapy and counseling, in turn, are oriented toward diagnosing or resolving psychological and emotional difficulties rooted in experience, in contrast to coaching's forward-looking focus on performance and potential (Passmore & Fillery-Travis, 2011).

Situating coaching against these six adjacent practices clarifies its distinct scope: a present-to-future-oriented partnership that positions the client, rather than the practitioner, as the primary source of insight and direction.



Figure 1. Graphical definition of coaching

Source: adapted by the authors, based on ICF (2025), Cox et al. (2010), and Passmore & Fillery-Travis (2011).

Building on this conceptual foundation, the present study aims to investigate Romanian teachers' perceptions of the coaching activities carried out within the CONNECT project's piloting phase, to assess their effectiveness and to identify directions for optimizing future coaching interventions. The following section reviews the existing literature on the roles, functions, and profile of effective coaching, before detailing the methodology and findings of the present research.

1. LITERATURE REVIEW

In various fields, the term coaching has been significantly developed in the last decade, in relation to the interest shown by various authors and researchers. For instance, a search of the Science Direct database indicates a marked increase, after 2017, in the number of publications containing the term "coaching" in the title, including review articles, research articles, and book chapters.

The concept of "coaching" is approached from different perspectives, related to: the specifics of coaching, in different contexts of delivery, functional models of coaching, roles/functions of coaching, coach characteristics etc.

The scope of coaching is diversified, including both activities aimed at individual as well as organizational/ institutional development. As a result, coaching has acquired an increasingly important role in organizational policies and practices implemented to increase

efficiency in organizations and establish the well-being of employees. (Underhill, McAnally, & Koriatt, 2007; Grant, 2020)

Gavrilă (2014) identifies the roles of coaching as follows:

- it unleashes a person's potential to maximize performance;
- it helps/ supports beneficiaries to learn, but does not teach them directly;
- it supports the beneficiaries to become what they want - to become as good as possible in a particular field;
- it tracks the change of the beneficiary in the direction he/ she wants; facilitates development, performance, and continuous learning.

According to the same authors, the profile of a good coach includes the following characteristics (Gavrilă, 2014):

- is open, flexible, and adaptable in communication with the beneficiary;
- can constantly provide constructive feedback;
- has a permanent supportive attitude and attaches importance to the well-being of the beneficiary;
- empathizes with the beneficiary and supports and encourages him/ her to achieve his/ her goals;
- pursues long-term results, showing patience and perseverance in achieving them;
- remains impartial, does not judge and does not introduce prejudices or generalizations from personal life.

Beyond these individual traits, the relationship established between the coaching process actors must be rooted in ethics and clear principles, featuring defined boundaries for acceptable behavior alongside active involvement and commitment (Gorghiu, Bîzoi, & Santi, 2022).

Taken together, those perspectives suggest that the effectiveness of coaching interventions depends both on the coach's individual competencies and on the structural design of the coaching process itself. However, as noted in the introduction, empirical evidence on how beneficiaries - particularly teachers involved in structured, project-based coaching - perceive these processes remains limited, which further supports the rationale for the present study.

2. METHODOLOGY

Without aiming to replicate an internationally known coaching model but taking inspiration from some of them, the coaching programme proposed in the CONNECT project is structured in three steps:

- inter/ self-knowledge and familiarization phase with the CONNECT project ideology;
- effective coaching stage;
- evaluation stage of coaching activities.

For each of those three steps, various activities and working tools have been designed, and a minimum number of coaching meetings have been established (Okada, 2023; Gorghiu et al., 2024), as illustrated in Table 1.

Table 1. *The coaching process in the CONNECT project*

Steps	Activities description	Working tools	Minimum number of meetings
1. Inter/ self-knowledge and familiarization phase with the CONNECT project ideology	- inter-knowledge - through reflection and conversation, coaches identify the teachers' strengths and weaknesses, the aspects they want to improve, their interests and felt needs in relation to their own professional development - familiarization with the ideology of the CONNECT project, knowledge of the team of specialists in each country, directly involved in the project and with whom they interact during the activities, knowledge of tasks and responsibilities - identification of own expectations, related to the experience/ expertise to be gained from participation in CONNECT project activities	<i>Personal SWOT analysis from a professional perspective</i> <i>Information related to the CONNECT project, in the ppt format</i> <i>Questionnaire for teachers to identify coaching needs and interests</i>	1
2. Effective coaching stage	- detailed analysis (from a scientific and methodological point of view) of the science action units to be implemented; discussions with a clarifying role in relation to each stage of the designed didactic scenario - designing the piloting phase of the project, for implementation of a science action teaching scenario - teachers benefit from the support of specialists, both from the scientific perspective and from the didactic/ methodological perspective - guided discussions for identifying as accurately as possible the problems encountered by teachers in implementing science action units	<i>Science action unit</i> <i>Guide for organizing coaching discussions</i>	1

3. Evaluation stage of coaching activities	- administration of tools for collecting feedback (questionnaire, reflection sheet etc.) addressed to the teachers involved in the project	<i>Reflection journal</i>	1
	- collecting and processing obtained qualitative and quantitative data and identifying solutions for optimizing future coaching activities	<i>Questionnaire for teachers for evaluating coaching activities</i>	

Source: the authors' own elaboration, based on Okada (2023) and Gorghiu et al. (2024).

Regarding the coach selection process, 10 criteria were established, and for being eligible, a coach had to satisfy at least 6 of them:

- initial training in science fields (Physics, Chemistry, Biology);
- at least 10 years' experience in pre-university education;
- participation as a trainer in at least one project (national or international)/ in-service training programme in science teaching in the last 5 years;
- participation as a trainee in at least one (national or international) project/ in-service training programme in science teaching in the last 5 years;
- experience in similar activities (methodologist, mentor, coordinator of pedagogical practice, head of methodological committee, head of pedagogical council etc.);
- participation, in the last 5 years, at scientific events (conferences, symposia, workshops, round tables) related to science education, open science, open schooling;
- good communication and interpersonal skills;
- proactive, constructive, and supportive attitude;
- teamwork skills;
- open, flexible attitude to change and innovation.

The proposed main method used for data collection was a questionnaire survey. For this purpose, it was developed with 8 closed-ended, predetermined response items (2 multiple-choice items and 6 scaled response items). The questionnaire was administered online, via *Google Forms*, respecting the conditions of anonymity and confidentiality of the provided answers. All expressed items comply with the principles of professional ethics, and are in accordance with the provisions of the European Union Directives on cyber security and processing of personal data, contained in Regulation (EU) 2016/679 of the European Parliament and of the Council of the European Union of 27 April 2016 on the protection of individuals, concerning the processing of personal data and on the free movement of such data (General Data Protection Regulation). All respondents agreed to the processing of personal data for research purposes.

To clarify some of the results obtained through questionnaires, a focus-group survey was also conducted with a small number of respondents.

The research sample consisted of teachers from pre-university education (20), having different specializations and school levels, who participated in the piloting phase of the science action unit, within the CONNECT project.

The resulting data from the questionnaire survey were initially processed quantitatively using statistical-mathematical methods and then analyzed qualitatively in relation to the focus group survey data.

3. RESULTS

In line with the research goals of evaluating the effectiveness of the coaching activities and identifying optimization solutions, the findings are organized around the following main dimensions:

- the effects of coaching activities at the level of the training process, at the level of students and in professional development settings;
- the management of time for the mentioned activities;
- the quality of the coaching relationship and the selected strategies for coaching;
- the extent to which the teachers' expectations have been confirmed.

In this respect, to the question: *“To what extent do you think that the coaching activities in the CONNECT project led to the optimization of the students' instruction process (teaching-learning-assessment) in science?”*, 60% of the respondents answered *to a very great extent* and 40% *to a great extent* (Figure 2).

Noting that no responses were recorded for the other three levels (to a moderate extent, to a small extent, to a very small extent), it can be considered that coaching activities added value to the quality of the educational process, concerning the students who benefited from science actions designed in the frame of the project.

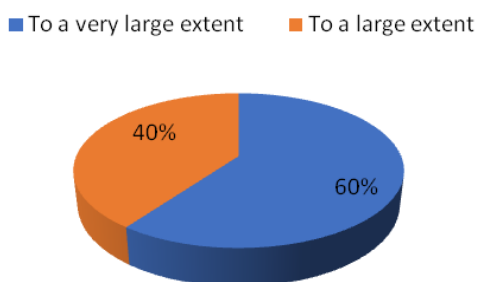


Figure 2. Teachers' perceptions related to the extent to which the project coaching activities have led to the optimization of students' science education process

Source: the authors' own research.

Teachers were also questioned about the added value they feel in relation to their own professional competences as a result of participating in CONNECT project activities. The recorded responses are also placed at the top of the rating scale, as seen in Figure 3.

A similar response pattern to the previous item is observed, which strengthens the conviction that, by participating in the project's coaching activities, teachers had the opportunity to develop their professional skills within a modern, interactive, and innovative science training approach.

■ To a very large extent ■ To a large extent

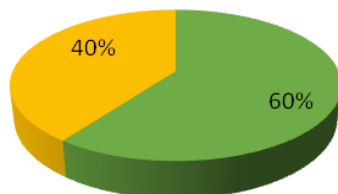


Figure 3. Teachers' perceptions about the added value they feel in relation to their own professional competences as a result of participating in project activities

Source: the authors' own research.

Another item concerned teachers' answers on how they would rate on a scale of 1 to 10 (1 - completely unsatisfactory/ insufficient, 10 - excellent/optimal) various variables specific to the coaching activities: (a) the relationship between both coaching actors; (b) the quality of the used coaching strategies; (c) time allocated for coaching activities (Figure 4).

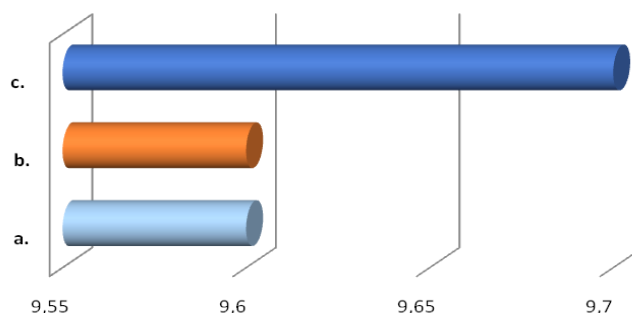


Figure 4. Teachers' perceptions relating to the rate of various variables specific to coaching activities

Source: the authors' own research.

As can be seen in Figure 4, across all three variables involved in coaching activities, the responses are placed in the upper part of the rating scale, suggesting that the coaching activities were well designed and rigorously organized in relation to the needs and participants' expectations.

To the question: "How do you rate your own achievements as a result of your involvement in coaching activities?", the teachers' answers are distributed as follows: 30% - very good ("I internalized everything that was discussed and felt prepared to apply science action units in class"), and 70% - well ("I managed to internalize most of what was discussed and felt partially prepared to apply science action units in class"). Those values (Figure 5) may indicate that coaching activities carried out in the project have produced - to a considerable extent -, superior qualitative results. However, as always, there is room for improvement, in the direction of more consistent and/or better adapted activities to the specifics of teaching of each discipline, teaching style and context in which the training takes place.

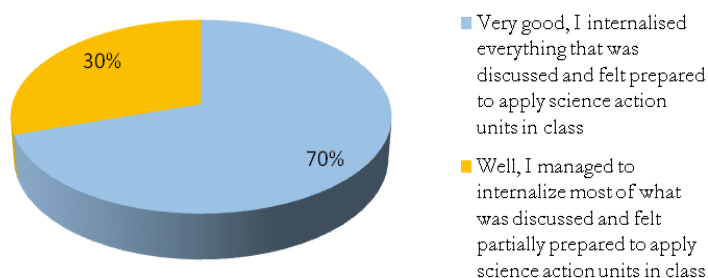


Figure 5. Teachers' perceptions of the effects of their involvement in coaching activities

Source: the authors' own research.

To analyze the effects of coaching activities from other perspectives, the respondents were asked the following question: *"To what extent did participation in the coaching activities confirm your expectations?"*. The feedback covered 7 dimensions against which respondents had to configure their answers using a 5-step Likert scale. Across all seven dimensions, responses were predominantly concentrated in the top two levels of the 5-step scale, which confirms the value of coaching activities in terms of beneficiaries' level of satisfaction (Figure 6).

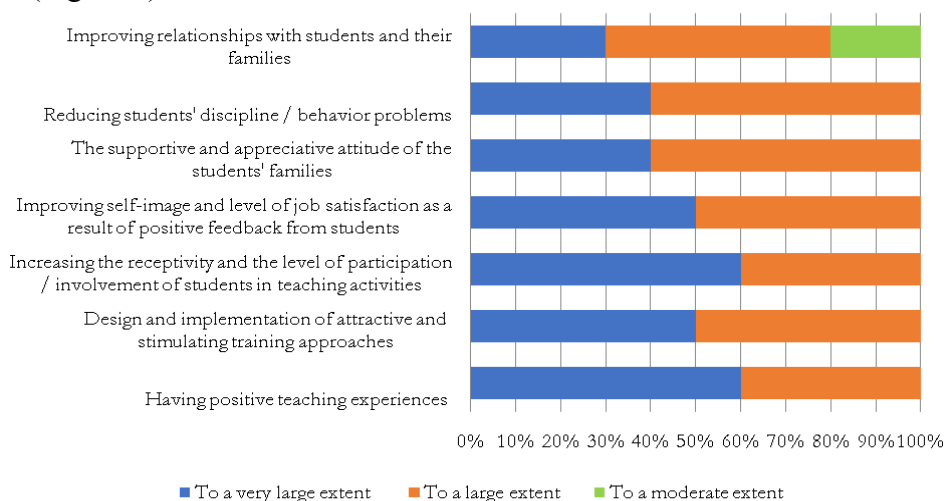


Figure 6. Teachers' perceptions related to the extent to which coaching activities responded to their expectations

Source: the authors' own research.

In terms of the effects on students, concerning the implementation of other action learning units, *"making interdisciplinary connections"*, followed by *"increasing interest in the study of science"* and *"increasing motivation to learn"* were at the top of respondents' preferences.

These three preferences - interdisciplinary connections, increased interest in science, and increased motivation to learn - are consistent with the four dimensions around which the present research was organized, particularly the effects of coaching activities at the level of students.

More importantly is worth underlining other effects that obtained significant weights in the respondents' choices: *"promoting a positive attitude towards school/ education"*,

“better involvement in school and extracurricular activities”, “improving self-image and increasing self-confidence” etc.

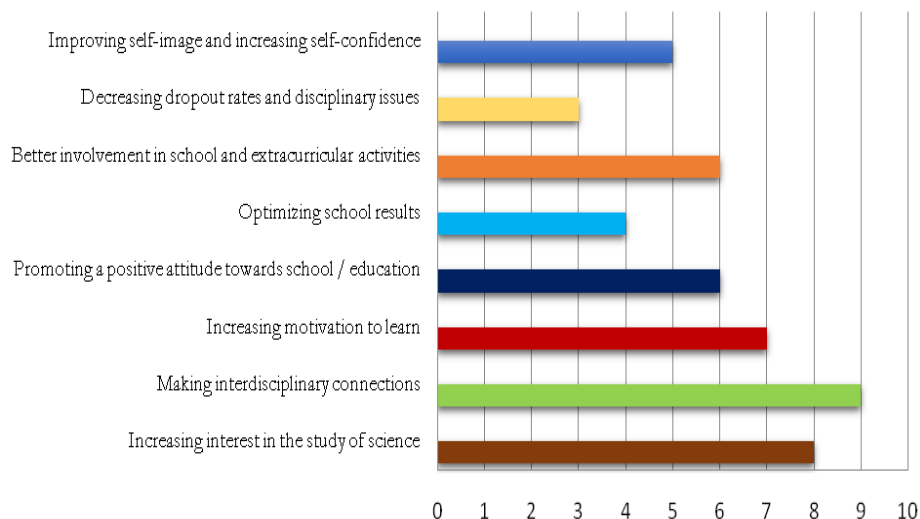


Figure 7. Teachers' perceptions concerning the effects on students when implementing science action learning units

Source: the authors' own research.

Overall, across all four dimensions investigated, teachers' responses were consistently concentrated in the upper range of the respective rating scales, pointing to a generally positive perception of the coaching activities carried out within the CONNECT project's piloting phase.

4. LIMITS AND DISCUSSIONS

As most of the research in the area of coaching consists of case studies and tests of methodological frameworks (Rațiu, & Baban, 2020), the present study addresses this gap by providing survey-based empirical evidence on how teachers themselves perceive coaching activities delivered within a structured, project-based intervention. In this respect, the consistently high ratings obtained across all four investigated dimensions substantiate the roles attributed to coaching in the literature - namely, unlocking a beneficiary's potential and facilitating continuous development (Gavrila, 2014) - and are in line with the distinct, present-to-future-oriented positioning of coaching relative to consulting, training, or mentoring (Cox et al., 2010).

Considering the three effects on students reported above - interdisciplinary connections, increased interest in science, and increased motivation to learn - in light of European policies aimed at increasing students' engagement in science, it can be argued that such implementations help students connect science with the real world. Once a student sees *why* a concept matters across different areas of life, their curiosity is naturally piqued, which may explain why increased interest in science followed closely behind interdisciplinary connections among respondents' preferences. Action learning of this kind appears to turn students from passive consumers of information into active investigators.

The limitations of this research result mainly from the small number of respondents, given that a small number of teachers were questioned and interviewed (20). At the same time, some methodological limitations were present, due to the predominant use of a

questionnaire-based survey (administered online), combined with a focus group discussion for clarifying the teachers' answers. As the respondents were teachers who had voluntarily participated in the CONNECT project's piloting phase, their responses may be subject to social desirability bias, and no control group was used for comparison. Additionally, the questionnaire was developed specifically for this study, without a prior validation process, and the data reflect teachers' perceptions immediately after the piloting phase, without any longitudinal follow-up to assess whether these effects are sustained over time.

For these reasons, the results should be interpreted as specific to the Romanian context and to the particular design of the CONNECT coaching programme, and their generalization to other cultural contexts or coaching configurations should be made with caution.

CONCLUSION

The present study aimed to investigate Romanian teachers' perceptions of the coaching activities carried out within the CONNECT project's piloting phase, to assess their effectiveness and to identify directions for optimizing future coaching interventions. The results confirm that teachers perceived the coaching activities positively across all four investigated dimensions - effects at the level of training and students, time management, the quality of the coaching relationship and strategies, and the extent to which expectations were confirmed - with responses consistently concentrated in the upper range of the rating scales used.

In line with the second research goal, the following proposals for optimizing future coaching activities were outlined based on the respondents' answers and focus group discussions:

- open approaches for implementation issues;
- positive, pro-active and creative attitude;
- flexible timetable for meetings/ activities;
- regular communication of results/ opportunities/ difficulties.

Within the specific context of the CONNECT project's piloting phase, the coaching activities carried out are seen to have reached a positive effect. In this respect, it is important to increase teachers' confidence in the values of the coaching process and to create favorable working environments. Future research, involving larger and more diverse samples, validated instruments, and longitudinal designs, could further test the extent to which these findings hold across other coaching configurations and educational contexts.

Acknowledgements:

This work was mainly funded through the Project "*CONNECT - Inclusive open schooling through engaging and future-oriented science*", in the frame of the HORIZON 2020 - EU.5.d. Programme - "Encourage citizens to engage in science through formal and informal science education, and promote the diffusion of science-based activities, namely in science centers and through other appropriate channels", Grant agreement ID: 872814.

The authors express their gratitude to all the actors (partners, teachers, students) involved in this research, whose invaluable insights continue to guide and shape our ongoing coaching initiatives in other projects.

REFERENCES

- [1] Cox, E., Bachkirova, T., & Clutterbuck, D. (Eds.). (2010). *The complete handbook of coaching*. SAGE Publications.
- [2] Gavrilă, C. (coord.) (2014). *Manualul mentorului*. [*The mentor's Handbook*]. Iași: Spiru Haret
- [3] Gorghiu, G., Bizoi, M., & Santi, E.-A. (2022). Exploring Students' Perception Concerning Educational Coaching: Premises for the Design and Implementation of an Online Coaching Platform in Academia. *Postmodern Openings*, 13(4), 142-157. <https://doi.org/10.18662/po/13.4/511>
- [4] Gorghiu, G., Sherborne, T., Kowalski, R., Vives-Adrián, L., & Ribeiro, S. (2024). Enhancing Teachers' Self-Efficacy Supported by Coaching in the Content of Open Schooling for Sustainability. *Sustainability*, 16(22), 10131. <https://doi.org/10.3390/su162210131>
- [5] Grant, A.M. (2020). A Languishing-Flourishing Model of Goal Striving and Mental Health for Coaching Populations. In: J. Passmore and D. Tee (eds.), *Coaching Researched*.
- [6] <https://doi.org/10.1002/9781119656913.ch4>
- [7] International Coaching Federation. (2025). *ICF core competencies*. <https://coachingfederation.org/resource/icf-core-competencies/>
- [8] Okada, A. (coord.) (2023). *Inclusive Open Schooling with Engaging and Future Oriented Science: Evidence-based practices, principles, and tools*. Milton Keynes: The Open University UK Rumpus Press. Available at: https://oro.open.ac.uk/89951/1/CONNECT_EN.pdf
- [9] Passmore, J., & Fillery-Travis, A. (2011). A critical review of executive coaching research: A decade of progress and what's to come. *Coaching: An International Journal of Theory, Research and Practice*, 4(2), 70-88. <https://doi.org/10.1080/17521882.2011.596484>
- [10] Rațiu, L., & Baban, A. (2020). Coaching. Fundamente teoretice și direcții aplicative. [Coaching: Theoretical Foundations and Practical Applications]. *Psihologia Resurselor Umane*, 8. 50-65. <https://doi.org/10.24837/pru.v8i1.426>
- [11] SkillsYouNeed (2022). *What is coaching?* Available at: <https://www.skillsyouneed.com/learn/coaching.html>
- [12] Underhill, B.O., McAnally, K., & Koriatt, J.J. (2007). *Executive Coaching for Results. The Definitive Guide to Developing Organizational Leaders*. Berrett-Koehler Publishers, Inc.
- [13] Whitmore, J. (2009). *Coaching for Performance: Growing Human Potential and Purpose - The Principles and Practice of Coaching and Leadership*. 4th Edition, London: Nicholas Brealey Publishing