



The Need for Continuous Professional Development in Higher Education

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Abstract

The continuous professional development of higher education faculty is essential for maintaining the quality of the educational process and adapting to the ever-changing demands of society and the labor market. Enhancing pedagogical, digital, and research competencies contributes to more effective teaching and learning, fosters innovation, and promotes a dynamic academic environment. Furthermore, investing in professional development supports academic mobility and collaboration, strengthening institutional prestige and the competitiveness of universities at both national and international levels. The paper analyses the perception of professional training needs of 60 university teachers in Romania, focusing on four areas of development: teaching activity, research activity, personal development, and mentoring. The research examined how these needs differ by teaching degree, age, and seniority in higher education. The results highlight distinct trends: teachers at the beginning of their careers perceive the development of research skills, especially those related to writing and publishing scientific articles, as essential, whereas teachers with extensive teaching experience show greater interest in training focused on digital pedagogical skills and innovations. Also, beginning teachers show a greater interest in participating in the personal development and mentoring program. The conclusions emphasize the need for differentiated, flexible, and integrated professional development programs tailored to each academic profile. These programs enable faculty to strengthen existing competencies and acquire new skills relevant to teaching, research, and academic projects.

Keywords: Continuous professional development; higher education; mentoring; personal development; research activity; teaching activity

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1. Introduction

In a society in continuous transformation, characterized by the diversification of educational needs, technological progress, and successive reforms in education systems, the continuous professional development of teachers is an essential pillar of ensuring quality in higher education (Fernandes, 2023; Mogonea, 2022). In this context, university teachers are required to constantly update their skills and be open to change (Draghicescu, 2018; Gast, 2022). The perception of the need for continuous training is not homogeneous; it can be influenced by factors such as age, teaching degree, accumulated professional experience, and also by the specifics of the subjects taught. Although the specialized literature emphasizes the importance of continuous professional development in the university teaching career (Cotta, 2024), studies exploring the relationship between the professional profile of teachers and the motivation for improvement are still relatively limited in the Romanian context.

According to the Higher Education Law no. 199/2023, universities have the autonomy to establish their own human resources development strategies, but they also have the responsibility to ensure institutionalized continuous training mechanisms, adapted to the real needs of teaching staff. Meanwhile, the regulatory framework encourages continuous training, including through scientific research, international internships, inter-institutional partnerships, and participation in educational projects (Parlamentul României, 2023).

At the European level, the European Commission promotes the concept of *continuing professional development* (CPD) as an integral part of the academic career, emphasizing the need for adaptive, personalized, and transdisciplinary training. Reports such as „Modernization of Higher Education in Europe: Academic Staff – 2017” (Eurydice, 2017) indicate that most European countries require or stimulate the involvement of university teachers in continuous training, in particular in the areas of university didactics, digitalization, assessment, and inclusion. Also, the report „Higher Education Staff: Education and Training 2020” (European Commission, 2020) highlights the trend of moving from standardized training to needs-based training, centred on individual careers, with an emphasis on transversal skills, educational leadership and the use of technology.

The evolution of the professional development activity of teachers involves initial training, continuous training, and self-training. According to modern education systems, the continuity of the 3 training directions in a congruent manner is mandatory (Carabet, 2015). The role of academic staff goes beyond simple teaching, involving developing academic curricula, mentoring activities, research projects, publishing scientific papers, and interdisciplinary and international collaborations. Teaching skills include designing teaching materials, using active methods, and integrating educational technologies. Research skills include formulating hypotheses, collecting and analysing data, and disseminating results, and research enriches teaching by providing new perspectives and tools, while teaching activities can generate questions that lead to innovative research (El-Adawy, 2023; Fullan, 2016). These multiple responsibilities highlight the need for integrated professional training. Thus, it is emphasized that continuing education is an excellent tool for developing the skills necessary for students to achieve better academic results (Mogonea, 2022). In recent decades, changes in higher education have generated increased pressure and uncertainty for university teaching staff, increasing the risk of cognitive, behavioural, physical, and psychological difficulties as a result of the demanding nature of the profession. For teachers at the beginning of their careers, a lack of experience and specific skills can exacerbate the negative impact of these demands on their personal well-being (Gast, 2022).

Internationally, the importance of continuing education as an integral part of educational effectiveness is emphasized, emphasizing the relevance of context, duration and institutional support (Desimone, 2009; Mogonea, 2022). De Rijdt et al. also show that the transfer of learning into academic practice depends on individual (experience, motivation), organizational (institutional climate), and structural (type of training program) variables (De Rijdt, 2013).

Although there are studies that have explored continuous professional development in higher education (El-Adawy, 2023; Moreira-Choez, 2024; Pelaez-Sanchez, 2024), within the Romanian context, there is a noticeable lack of empirical research that systematically analyzes the individual factors such as age, teaching degree, experience, teaching field, that influence teachers' perception of the need for continuous training (Cotta, 2024).

Most Romanian studies focus either on normative or theoretical approaches or on initial training programs, without capturing the subjective and differentiated dimension of the need for professional development related to the individual path. Therefore, research is required that correlates the professional profile of the teacher with the perceived level of training need, thus providing useful data for substantiating institutional policies.

The purpose of this article is to investigate the relationships between academic rank, age, teaching experience and the perceived need for continuous professional development among higher education faculty. Accordingly, the research was conducted along four distinct dimensions: teaching activity, research activity, personal development, and mentoring. Thus, the following research questions were formulated:

- What is the attitude of higher education faculty toward continuous professional development?
- What are the areas of interest for continuous training from the perspective of teaching activity and research activities?
- What are the areas of interest for training from the perspective of personal development?
- Is mentoring needed, and in which specific directions?

These research questions led to the formulation of the study's hypotheses. The main hypothesis posits that the professional development needs of higher education faculty are influenced by academic rank, age, and years of teaching experience.

The study proposes several secondary hypotheses:

H1: Faculty members with extensive teaching experience are more likely to express interest in training focused on digital and innovative competencies (e.g., the use of online platforms, modern pedagogical approaches).

H2: Early-career faculty members are more likely to perceive the development of research skills—particularly those related to writing and publishing scientific articles—as a critical training need.

H3: Early-career faculty members show greater interest in participating in personal development.

The need for mentoring is strongly perceived by early-career faculty, both in relation to teaching practices and research activities.

2. Methodology

The paper presents the perspective of teaching staff from the National University of Science and Technology POLITEHNICA Bucharest regarding the need for continuous professional development.

2.1. Participants

A total of 60 faculty members participated in the study, representing various levels of expertise and coming from multiple departments within the university. In the research, the target group is represented by teachers, described according to the following criteria: teaching degree, age, length of service in education, and type of subjects taught (Table 1).

Table 1. Description of the target group

Category	Subcategory	Percentage
Age	25-30 years	26.70%
	31-40 years	31.70%
	41-50 years	15.00%
	51-60 years	21.70%
	Over 60 years	5%
Teaching degree	Assistant lecturers	43.30%
	Lecturers	26.70%
	Associate professors	21.70%
	Professors	8.30%
Teaching experience	0-5 years	40.00%
	6-10 years	10.00%
	11-20 years	21.70%
	21-30 years	18.30%
	31-40 years	10.00%
Subjects taught at the university	Specialized courses	75.00%
	Field courses (basic disciplinary knowledge)	48.30%
	Fundamental courses (mathematics, physics, chemistry)	16.70%
	Complementary courses	21.70%

2.2. Instrument

The research instrument consisted of a self-developed questionnaire designed to investigate the perceptions of university teaching staff regarding their needs for continuous professional development. The questionnaire included 22 items, combining both dichotomous and multiple-choice questions, as well as Likert-scale items assessing the degree of importance (e.g., from “very important” to “not important at all”).

The items were structured to capture several key dimensions related to continuing professional development needs, including teaching activity, research activity, personal development, and mentoring. In addition, some items allowed respondents to select multiple options regarding preferred types of training programs and motivations for participation.

The questionnaire was developed by the authors based on the research objectives and a review of relevant literature in the field of continuous professional development. To ensure content validity, the items were formulated to reflect the main dimensions identified in previous studies and were reviewed for clarity and relevance.

2.3. Research procedure

The questionnaire was administered online via Google Forms and distributed through institutional email lists and internal communication groups. Participation in the study was voluntary and anonymous, ensuring confidentiality and encouraging honest responses. Data collection was carried out during the 2024–2025 academic year.

In the initial phase of the research, attention was directed toward exploring the target group's perception of continuing professional training. This stage aimed to capture participants' interest, motivation, and levels of engagement with lifelong learning opportunities, particularly in relation to their academic roles and career trajectories. Thus, participants were surveyed regarding their involvement in professional development programs over the past five years.

2.4. Data analysis

The collected data were analysed using descriptive statistical methods, including frequencies and percentages, to identify patterns in respondents' perceptions and training needs. The analysis was performed using spreadsheet tools (Microsoft Excel).

3. Results

The data showed that over 60% of respondents, a high percentage, participated in a training program in the last 5 years, which suggests a constant interest in professional development. Also, regardless of the teaching degree, the majority of respondents participated in continuous professional training programs. If we refer to the interest in continuing education programs in the future, 91.7% of respondents show a high interest in continuing education programs, regardless of the teaching degree. It can be emphasized that in the case of assistant lecturers, who are usually at the beginning of their careers, the greatest interest in continuing education is observed. Therefore, the majority recognizes the importance of continuing education.

The motivation for participating in continuing education programs varies. The most common reasons cited by teachers include the desire for professional development, the opportunity to network by establishing professional relationships, and improving teaching skills. The survey results highlight distinct preferences among teachers regarding the most effective methods of training and professional development (Figure 1). The findings show that:

- Individual study was identified by 80% of respondents as the most valuable method, indicating a strong inclination toward self-directed learning. This preference reflects a desire for flexibility, self-determination, and a personalized pace in the training process, allowing educators to tailor their development to their own needs and schedules.
- For most of them, collaborative learning is a highly valued method for professional interaction. Thus, participation in specialized conferences was selected by 76.7% of respondents, and the exchange of experience with other teachers was preferred by 75%. These results underscore the importance of professional interaction, peer learning, and knowledge sharing in skills development.
- Structured learning through participation in training courses and thematic events is less preferred than autonomous or peer-based approaches, possibly due to their fixed formats or limited adaptability.
- Learning through a mentor was preferred by only 45% of respondents. This lower percentage may suggest either a limited availability of mentoring opportunities or a reduced interest in one-on-one guidance compared to more independent or group-based methods.

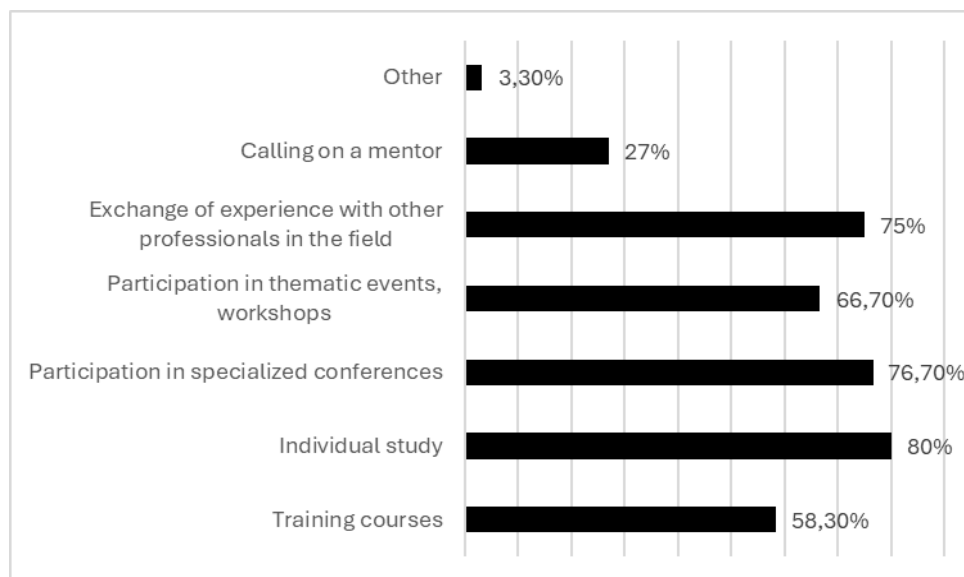


Figure 1. The continuing education methods preferred by teachers

Following an investigation of the thematic areas relevant to the professional development of teachers, it was found that respondents feel the need for training and improvement in several essential, topical areas (Figure 2).

- The most requested topic was the use of artificial intelligence in education (78%), which shows the desire of teachers to adapt to the new requirements dictated by the evolution of technology. This high percentage may also indicate a certain level of uncertainty among teachers regarding the effective pedagogical use of artificial intelligence, highlighting the need for structured and practice-oriented training programs in this area.
- Innovative pedagogies also occupy an important place (62.7%), and teachers are interested in modern teaching methods, which shows an openness to changing traditional paradigms. This finding suggests a transition from traditional teaching approaches towards more student-centered and interactive learning models.
- At the same time, the creation of educational resources is a priority among respondents, with a percentage of 57.6%.
- A similar percentage, 52.5%, is represented using virtual environments in learning, once again underlining the desire of respondents to adapt to new educational requirements. Taken together, these results indicate that digital competence is increasingly perceived as a core component of effective teaching in higher education.
- The least selected area is curriculum design (32.2%), which may suggest either a high level of confidence in the current planning of educational content or a lower perception of the importance of this subject

The findings reveal a clear shift towards digitalization and pedagogical innovation, emphasizing the need for continuous professional development programs that integrate both technological skills and pedagogical competencies.

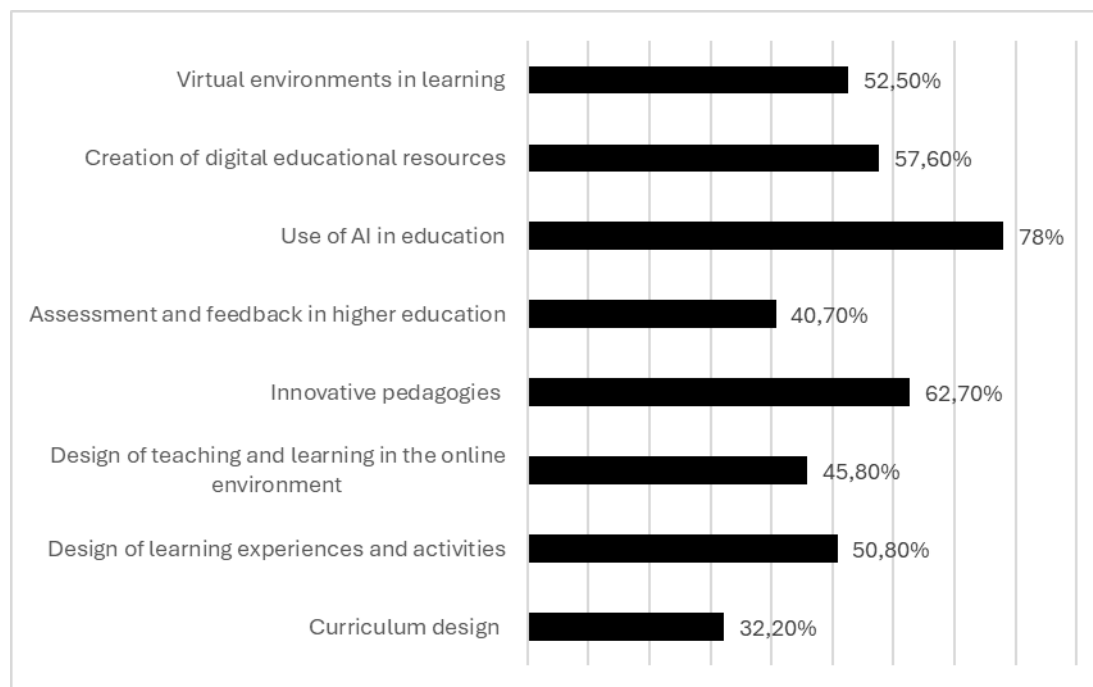


Figure 2. Thematic areas preferred by teachers in the teaching field

Another aspect investigated refers to the need for training in the field of research. The analysis of this dimension provides important insights into how teaching staff perceive the role of research-related competencies in their overall professional development. Thus, they were questioned about:

- The importance of participating in conferences and scientific events: Most respondents (43.3%) consider participation in conferences and scientific events to be very important for their professional development. Another significant category (45%) considers it important, which shows a generally positive perception of this type of activity. Also, a small percentage (approx. 10%) consider this participation to be of medium or low importance, which may indicate either a lack of interest or difficulties in accessing these events. Therefore, teachers are aware of the impact of conferences on their development, but there may be barriers to participation (cost, time, accessibility).
- The need for training courses on writing and publishing scientific articles in international journals: 25% of respondents consider training courses on writing and publishing articles to be very necessary, and 33.3% consider them necessary, which means that approximately half of the participants feel a strong need for training in this area. This result reflects the growing pressure on academic staff to publish in international journals, which has become a key criterion for career advancement and institutional evaluation.
- The need to collaborate with colleagues from other fields of research: Regarding the need to collaborate with colleagues from other fields, it was found that over 60% consider interdisciplinary collaboration to be very useful, which highlights an openness to multidisciplinary approaches, and only 10% do not see it as being of great importance. In conclusion, teachers are aware of the benefits of interdisciplinary collaboration and are interested in expanding their academic network. At the same time, this openness towards interdisciplinary collaboration may indicate a shift towards more complex and integrative research approaches, which are increasingly encouraged in the current academic context.

They were also asked about the areas in which they need support to improve their research activity (Figure 3). Depending on the teaching degree, different needs are identified in this area:

- Thus, assistant lecturers show a clear preference for support in writing academic papers, access to databases, and obtaining funds for research projects, which reflects difficulties specific to the early stage of their teaching and scientific careers. For this category, support is perceived as essential in developing basic research skills. This pattern suggests that early-career academics face structural challenges in developing research competencies, requiring targeted institutional support and mentoring.
- Lecturers (head of projects) mainly express their need for support in attracting funds and continuing training in academic writing and access to databases, indicating a transition to greater responsibilities in research projects. This transition reflects a shift from skill acquisition to the management and coordination of research activities.
- Associate professors focus on methodological aspects and attracting funds, suggesting a preference for developing skills in coordinating and designing research activities. This indicates a consolidation of research expertise and an increased focus on strategic aspects of research development
- Professors, on the other hand, indicate a very low level of needs, the only ones mentioned being related to access to databases or improvement in academic writing, which suggests increased autonomy and consolidated experience in scientific activity.

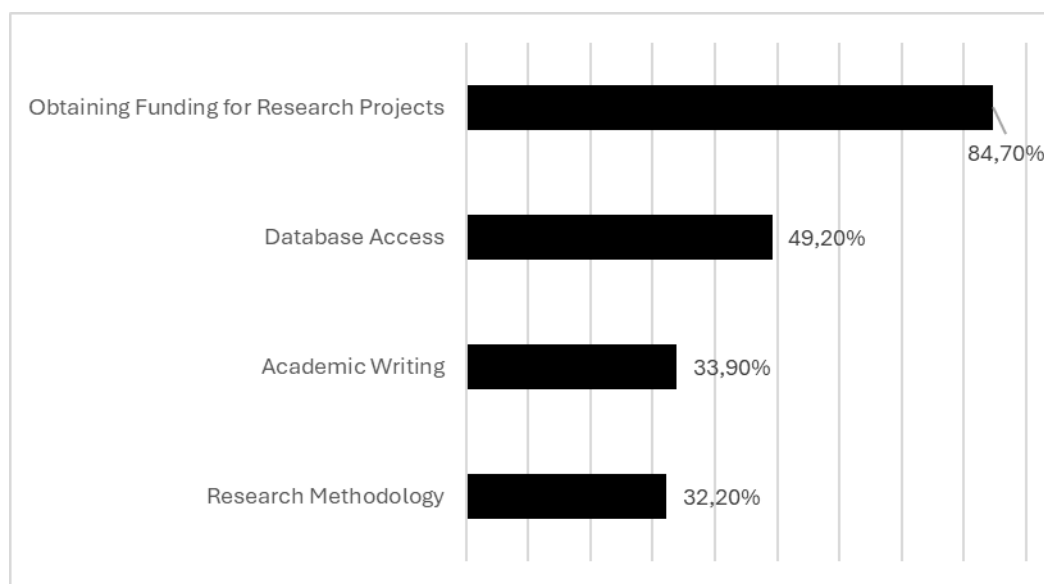


Figure 3. Favorite thematic areas of teachers in the field of research

In the field of personal development, from the data obtained (Figure 4) we can observe a uniform desire, regardless of the teaching staff's history in this field, the preferred topics are: Effective communication techniques (57.9%), Resilience and well-being at work (56.1%), Leadership (54.4%), Career development (54.4%), Time management (50.9%), Stress management (47.4%) and Emotion management (42.1%). The relatively balanced distribution of preferences suggests that personal development needs are perceived as broadly relevant, rather than limited to specific competencies. No significant differences were identified in the preferences of teaching staff in the field of professional development according to age/experience/teaching degree/subjects taught. This uniformity may indicate that personal development challenges are shared across different categories of teaching staff, regardless of experience or academic rank. Overall, the results suggest that personal development should be considered a strategic priority in continuous professional training, alongside pedagogical and research competencies.

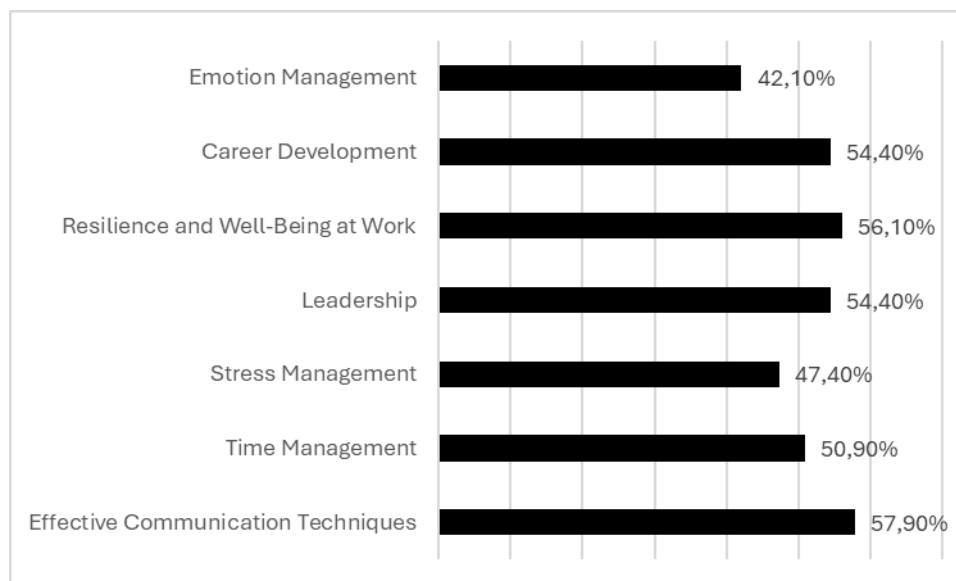


Figure 4. Favorite thematic areas of teachers in the field of personal development

The need for mentoring reflects the demand for guidance and professional support. The data indicate that many teachers feel the need for mentoring, but for the majority, it is not essential (5% - to a very great extent, 21.7% - to a great extent, 41.7% to a medium extent, 20% to a small extent, 11.7% - not at all). This distribution suggests a moderate overall demand for mentoring, with variations that may reflect differences in experience level, confidence, and previous exposure to mentoring practices. However, a significant part of the teachers consider mentoring important for improving their activities, while others either already have solid experience or are not aware of its benefits. In terms of developing research skills, mentoring is perceived as much more necessary. Most teachers (70%) consider guidance essential, which underlines the importance of specialized support in this area. This strong demand highlights the increasing complexity of research activities and the need for guided development, particularly in areas such as publishing, project management, and funding acquisition. Of course, the need for mentoring is felt more intensely for beginners/ assistant lecturers.

Referring to the need for mentoring in the design, organization, and evaluation of teaching activities, a diversity of opinions was observed among teachers (Figure 5):

- 41.7% of respondents consider that they need mentoring to a moderate extent, which suggests an awareness of the importance of guidance, but without considering it indispensable for teaching. This finding reinforces the idea that mentoring plays a critical role in supporting early-career academics, facilitating their transition into independent teaching and research roles.
- 21.7% report a high need, and 11.7% a very high need for mentoring. Thus, approximately one-third of teachers feel an acute need for support, which may reflect difficulties in the practical application of teaching activities or a desire for continuous improvement. These results suggest that mentoring in teaching is perceived as beneficial, particularly in relation to practical classroom challenges and the application of pedagogical strategies.
- On the other hand, 20% of respondents say they need mentoring only to a small extent, and 5% do not consider this type of support necessary at all. These percentages can be interpreted either as an indicator of consolidated teaching experience or as a possible lack of awareness of the benefits of mentoring in professional development. Alternatively, this

may reflect a tendency among more experienced staff to rely on their accumulated expertise rather than seeking external support.

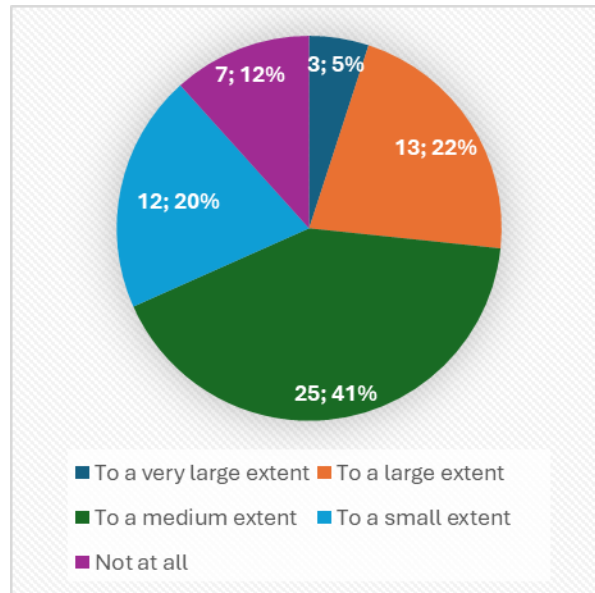


Figure 5. The need for mentoring teachers in the teaching field

Figure 6 presents data on the need for mentoring for the development of research skills. 13.3% of respondents believe that they need mentoring to a very great extent, and 31.7% to a great extent. Approximately 40% believe that mentoring is needed to a medium extent.

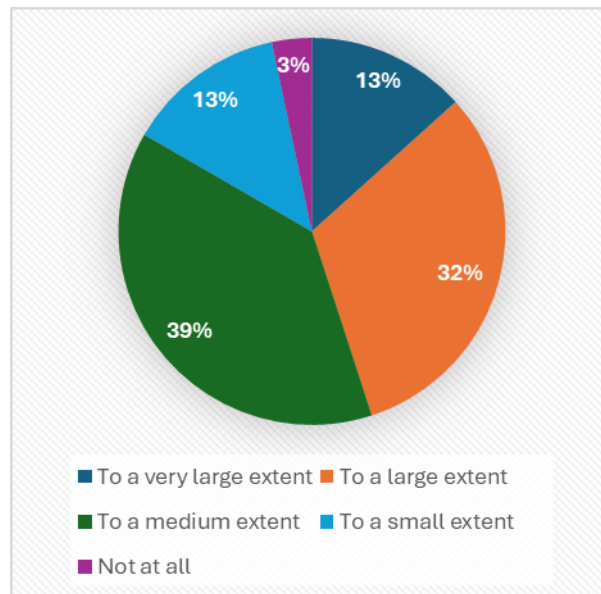


Figure 6. The need for mentoring teachers in the research field

The results emphasize the need to formalize mentoring practices and adapt them to different career stages, ensuring both accessibility and effectiveness in supporting academic staff.

4. Discussions

The analysis of interest in participating in continuing professional development programs, based on respondents' age, reveals a somewhat predictable trend: teachers aged between 30 and 40 show the highest level of interest in professional development. In contrast, interest in such programs decreases significantly among teachers over the age of 50. One possible explanation is that teachers aged between 30 and 40 are often at a stage of professional development, seeking advancement, specialization, or adaptation to evolving educational standards and technologies. Their motivation is often driven by both institutional expectations and personal ambition. In contrast, educators over the age of 50, especially those approaching retirement, feel confident in the teaching methods they have used for a long time, so they may perceive fewer benefits from continuing education. Generational differences in attitudes towards digital tools and pedagogical innovation may also contribute to lower participation.

Our results are consistent with the literature. Zhang et al. (2021) indicate that, compared to inexperienced teachers, experienced teachers are less motivated to participate in learning activities. This could mean that professional development activities should be designed to be more challenging for experienced teachers. For example, professional development programs for experienced teachers could focus on implementing innovative pedagogical methods in the classroom and providing mentoring and workshops for novice teachers. Additionally, to enhance teachers' motivation to learn, their previous learning experiences should be taken into account. Professional learning activities could be carefully tailored to teachers' individual needs, creating personalized learning pathways that are likely to be more motivating and effective than a one-size-fits-all approach.

From the collected data, we observe that preferences regarding continuing education are influenced by teaching degree. Thus, correlating the data, we observe that assistant lecturers tend to go towards participating in training courses, workshops, and calling on a mentor. This aspect is a result of the fact that, as a rule, assistant lecturers are at the beginning of their careers, and their training is based on consolidating skills through structured courses and support from mentors. This model is consistent with research indicating that beginning teachers are more motivated by structured guidance and skill building through mentoring and formal training (Xing, 2022). Mentoring provides practical support and helps beginning teachers gain confidence in classroom management and pedagogical skills.

Regarding teaching staff with the title of lecturers/associate professors, the data show a trend towards training courses and experience exchanges. In this case, a relatively balanced distribution of responses is observed, which suggests that they accept several training methods. In the case of lecturers, a preference is observed for specialized conferences and thematic events, probably due to the fact that they are more advanced in their careers and emphasize updating knowledge and creating professional networks. This is consistent with the findings of Avalos et al., who note that mid-career teachers value a variety of professional development methods and are inclined to combine structured learning with collaboration with colleagues to improve pedagogical practice. This balance reflects their increasing autonomy and confidence in selecting learning opportunities that meet their professional needs (Avalos, 2011).

Professors also have the highest values for experience exchange and academic events, but the lowest responses to training courses, as they need collaborations more than fundamental training. Therefore, such an interpretation can guide institutions in personalizing in-service training programs for teachers, adapting to the needs of each individual. This supports the findings of Desimone et al., who point out that experienced educators prioritize networking, knowledge updating, and collaborative activities over basic training programs, as they already possess fundamental competencies and seek opportunities to hone their expertise and influence educational practice (Desimone, 2009).

Experienced teachers show a pronounced interest in training focused on digital competencies and pedagogical innovation, such as the use of online platforms and integration of new educational technologies, aligning with literature emphasizing their efforts to adapt teaching strategies to evolving educational contexts (Moreira-Choez, 2024). Conversely, early-career teachers identify research skill development—particularly in academic writing and publishing—as a critical need, consistent with evidence highlighting the importance of scientific productivity for career advancement (El-Adawy, 2023). Additionally, they express a strong interest in personal development programs addressing self-awareness, leadership, and organizational well-being, supporting the view that such initiatives enhance professional performance (Gast, 2022). Mentoring also emerges as a key requirement for novice faculty, aiding both teaching practices and research activities, which aligns with studies demonstrating its role in facilitating academic adaptation and improving job satisfaction and retention (Xing, 2022).

The study explored teachers' perspectives regarding the need for professional development across four key domains: teaching activity, research activity, personal development, and mentoring. The literature highlights that, despite the importance of integrating technology in education, many teachers do not use it effectively due to a lack of access, insufficient training, and limited technical support. Therefore, continuous professional development in the field of educational technologies is essential to ensure their appropriate pedagogical use in the classroom. Thus, the integration of technology in higher education depends not only on the technical skills of teachers but also on institutional support and personalized learning opportunities. Continuous professional development must be flexible and adapted to the context (Lidolf, 2020). Also, Edileuza de Freitas et al. argue that the current training of university teachers is mainly scientific and technical, with gaps in the pedagogical training necessary for more effective teaching activity (Edileuza de Freitas, 2016). Salmeron Aroca et al. (2022) highlight that younger teachers are better prepared in the use of information and communication technologies, while older teachers have a higher level of competence in managing classroom processes and relationships. This difference suggests that professional development programs should take into account these complementary skills and provide opportunities for mutual learning between teachers of different ages. Similar results were published by Opre et al., with early-career teachers being more oriented towards development plans and developing teaching skills, while tenured teachers are more interested in developing their research skills (Opre, 2008).

Preferences regarding research support vary significantly depending on the teaching level, from fundamental needs at the beginning of their careers (assistant lecturers), to specialized or minimal needs in the case of experienced staff (professors). Hauss et al. (2021) highlight the importance of academic conferences as essential spaces for extracting novel, often unpublished, information and for forming collaborative social networks. Also, through informal interactions and professional exchanges, participants can acquire new methods, identify opportunities for collaboration, and stimulate significant changes in both academic practice and the applicability of research to other sectors. In this context, the present study reinforces the role of academic networking and collaborative environments as key drivers of research development, suggesting that participation in such activities should be systematically supported at the institutional level.

The majority of higher education teachers consider that self-knowledge and personal development contribute significantly to improving teaching, with variations depending on the teaching rank. Those most convinced of the positive impact are assistant lecturers and associate professors/university lecturers, who mostly indicated the option “to a very large extent”. Lecturers also showed a favorable attitude, while professors had a more balanced distribution of responses, suggesting a more nuanced, but still positive attitude. These differences indicate that the perception of personal development varies depending on professional experience, being perceived as more necessary in the early stages of the academic career. This trend may be explained by the increased need for adaptation and identity formation among early-career academics, who are still developing their teaching style and professional confidence. At the same

time, the more balanced responses of senior staff may suggest either a higher level of confidence in their existing competencies. In the literature, there is data that reveals that, in addition to institutional organization that supports professional learning, it is vital to cultivate individual reflexivity, allowing teachers to rethink their teaching practices and grow continuously (Li, 2023). The findings of the present study further emphasize the need to integrate personal development components into institutional training programs, ensuring a holistic approach to academic professionalization.

Mentoring is a key component of scientific achievement, contributing to the measurement of the professional success of mentors and mentees (Katona, 2025). A common indicator of success in science is the establishment of a large research group, considered a sign of excellent mentoring and high-quality research. However, large and competitive groups can amplify the dropout rate, which is particularly high among early-career researchers (Xing, 2022). In this context, mentoring can be understood not only as a support mechanism but also as a strategic tool for enhancing both individual performance and institutional research capacity.

There is a clear demand for research-focused mentoring programs, which suggests that teachers feel the need for more in-depth guidance in this area. Compared to teaching-related mentoring, the higher demand in research suggests that this domain is perceived as more challenging and less accessible without guided support. In support of these results, we recall that Meriona et al. present evidence from the field of continuing professional development in higher education, highlighting how communities of practice, mentoring, institutional support, and safe dialogue environments stimulate pedagogical innovation and teacher engagement (Merino, 2025). In line with these perspectives, the present findings support the integration of structured mentoring programs within higher education institutions, as part of a comprehensive approach to professional development.

The most important measure resulting from this study is the development of personalized continuous training programs. Such programs must be built according to the teaching degree, the age of the teachers, and the level of professional experience. Personalizing training allows for a differentiated approach, with a greater impact on professional development, contributing to reducing skills gaps and increasing the efficiency of the instructional-educational process.

At the policy level, the development of a coherent national or institutional framework for continuing professional development in higher education would ensure the consistency, accessibility, and quality of training programs. Beyond tailored training programmes, the findings suggest the need for institutional strategies to systematically support continuous professional development. Universities should consider establishing structured mentoring programmes, particularly for early-career academics, to facilitate their integration and professional development.

In addition, institutional policies should promote the integration of training in digital pedagogy, ensuring that teaching staff are equipped to use modern educational technologies effectively. This can include regular workshops, peer learning communities, and access to digital resources. Another important implication is the need for formal recognition of participation in professional development activities through incentives such as career progression criteria, workload adjustments, or financial support. Such measures could increase motivation and engagement in continuous learning.

Research limits

The study has several limitations that should be acknowledged. First, the sample size is relatively small (60 participants) and limited to a single higher education institution, which restricts the generalizability of the findings. Second, the use of self-reported data may introduce subjective bias. Therefore, the results should be interpreted with caution and seen as exploratory, providing directions for further research.

A possible limitation of the research is that the data were collected exclusively through a self-reported questionnaire, which may introduce a degree of subjectivity in the responses. Another limitation could be due to the relatively small sample size (60), meaning that the results cannot be generalized to all professors at technical universities, let alone all professors in higher technical education in Romania.

At the same time, the results obtained may be influenced by the subjectivity of the respondents and the availability of participants, which may affect the diversity of the data. Also, the constant evolution of this field leads to a permanent change in the needs of teachers' professional training. Regarding access to resources, the possibility of implementing the research recommendations is limited by the available institutional resources.

Conclusions

In line with the mission of higher education institutions, professional development programs for university teaching staff should be tailored to the specific needs and roles of their academic activity. This study revealed notable differences in development priorities between experienced and early-career faculty members. These findings highlight the importance of designing differentiated and flexible support strategies that effectively address the evolving expectations and career stages of academic staff.

The growing importance of developing flexible, differentiated, and individualized training initiatives that effectively respond to the specific needs of faculty at different career stages. Implementing such programs not only enhances the quality of education and research but also promotes the sustainable development of human resources within higher education. The study contributes to the existing literature by providing empirical evidence from a technical higher education context, highlighting the differentiated professional development needs of teaching staff based on career stage.

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