

Pre-service Teachers' Perception regarding Reflective Competence

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Abstract: *Teachers' reflective competence is an important issue in initial and continuous teacher training nowadays. Several educational policy documents such as OECD, 2019; EUA, 2021; EUA 2023; ME, 2024; and recent research on "future skills" (Ehlers, 2022) underline that in the context of reforming education systems, the impact of digitization, reflection, reflectivity and reflexivity, is a key source for optimizing educational practices. Starting from the premise that reflective competence is one of the important "future skills" in the teaching career, the present research aimed to investigate pre-service teachers' perceptions of reflective competence ("students' eyes" according to Brookfield's theory of critically reflective teacher). The sample consisted of 327 student-teachers at the bachelor's and master's levels (initial training). A questionnaire was used to explore the way pre-service teachers see the reflective competence in teaching practices of their teachers. The data resulting from the analysis of the questionnaire highlighted that reflective competence is formed during university education (initial teacher training) and is facilitated by the observation of specific behaviors of some reflective teachers ($r = .52, p < .001$). Also, 27% of the variability in the development of pre-service teachers' self-reflexivity competencies is due to teachers' perceived reflexivity in the context of instructional-educational activities. Another practical conclusion is that reflexivity needs to be more 'visible' in the behavior of teachers and mentors in teaching practice in order to help pre-service teachers develop their reflective competence.*

Keywords: *teacher's reflexivity; reflective competence; pre-service teachers' perception*

How to cite: Voinea, M., Cioloca, A. M., & Șitoiu, A. (2025). Pre-service teachers' perception regarding reflective competence. *Revista Românească pentru Educație Multidimensională*, 17(3), 50-83.
<https://doi.org/10.18662/rrem/17.3/1013>

Introduction

The concept of reflexivity, which was initially used in education by Dewey (1933) and Schön (1983), was later developed by an increasing number of specialists (Korthagen & Vasalos, 2005, Larrivee, 2008; Brookfield, 2017) as reflexivity became a common practice for improving the quality of the teaching process.

Today, reflective competence is discussed as one of the skills necessary for the future which involves “the willingness and ability to reflect, i.e., the ability to question oneself and others for the purpose of constructive further development, as well as to recognize underlying systems of behavior, thought, and values and to assess their consequences for actions and decisions holistically.” (Ehlers, 2022, 7)

Consequently, many of the updated standards for the teaching profession include reflective competence in the future teachers' profile, such as recent educational policy documents OECD 2019. The existence of multiple levels of reflection highlights the complexity of reflective competence. For instance, Larrivee (2008) highlights four levels of reflection: pre-reflection – representing the “zero” level of reflection where teachers respond in their work with students automatically, without consciously considering alternatives; surface reflection – in which teachers focus on the teaching-learning-assessment strategies used to achieve predetermined objectives; pedagogical reflection – whereby teachers reflect on educational objectives, on the theories that facilitate pedagogical approaches, as well as on the connections between theory and practice; critical reflection – which represents the highest level of teacher reflexivity and considers the moral and ethical implications and consequences of educational practices on learners.

Reflective practice undoubtedly represents an optimal way to develop teachers' ability to reflect and improve their teaching strategies (Stîngu, 2011).

The critically reflective teacher, in Brookfield's theory (2017), needs to use the four lenses of critical reflection: (1) students' eyes, (2) colleagues' perspectives, (3) theory and (4) personal experience.

Starting from the theoretical premises presented above, we formulated the following research questions:

Q1: How is reflective competence viewed through the pre-service teachers' eyes?

Q2: Is there a relationship between the perception of the teacher's/mentor's reflective competence and pre-service teachers' reflective competence?

Based on the research questions, the following hypotheses were tested:

H1: The perception of teachers' reflexivity becomes more pronounced as pre-service teachers advance in their professional training.

H2: Teachers' reflexivity perceived by pre-service teachers varies depending on the year of study.

H3: The development of self-reflexivity competencies among pre-service teachers varies depending on the year of study.

H4: Teachers' reflexivity perceived by pre-service teachers is associated with the development of self-reflexivity competencies.

Literature review

The reflective competence of teachers is an important subject in training systems, especially in the current context of redefining competencies in accordance with the digitalization trends of society. There is even a reflective paradigm of teacher training (Schon, 1983; Moon, 1999; Păun, 2017), which today is seen as a solution for adaptation and continuous learning, because reflective practice is “an active, dynamic action-based and ethical set of skills, placed in real time and dealing with real, complex and difficult situations” (Moon, 1999).

The professional development of teachers is an essential element in strengthening the quality and effectiveness of the education system. In the dynamic context of today's society, characterized by rapid change and emerging challenges, it is necessary to design initial and in-service training pathways that are flexible, open and adaptable. At the heart of this approach is the cultivation of the value-based autonomy of future teachers, which is a prerequisite for the formation of a teaching body capable of acting responsibly, creatively and with a sense of involvement, regardless of the institutional or socio-educational context in which they work. Effective professional development calls for a high level of teacher engagement in their own professional endeavors, with the expected outcomes of this engagement being changes in teachers' practices and improvements in student learning outcomes (Darling-Hammond et al., 2017).

The professional training of teachers is aimed at developing the competencies necessary to perform the multiple professional roles, functions and newly emerging organizational duties. Thus, a fundamental principle in teachers' professional training is: the principle of reflection and responsible professional decision, which implies the need to view the teacher as a professional, whose pedagogical decisions are based on reflection on their own practices and a thorough psycho-pedagogical argumentation both in work with children and in building their own professional development

(Huncă, 2015). Such a reflective approach shapes the teacher's identity, which harmonizes the personal and professional dimensions, involving not only the notions of “Who am I?”, but also “Who am I as a teacher?” and “What does this identity mean in terms of how I teach?” (Beauchamp & Thomas, 2011). In this exploration of professional identity, teachers become aware of their own strengths and weaknesses, experiment with new professional activities, interact with new networks of people, and consciously perceive change in light of new emerging possibilities.

Changes in society have necessitated the updating/redefinition of professional standards for the teaching career, so that, alongside digital competencies, reflective competence has become an important benchmark in all teacher training systems (OECD, 2019).

These normative benchmarks provide teachers with a coherent frame of reference, facilitating the development of a clear and reasoned perspective on their own professional performance. According to the Ministry of Education (2024), on professional standards for the teaching profession, one of the general purposes aimed at is: the development and expansion of transversal competencies regarding interaction and communication with the social and pedagogical environment, taking responsibility for organizing, leading and improving the strategic performance of professional groups, self-control and reflective analysis of one's work, and others. The professional profile of the pre-university teacher in domain 5 concerns ethical, reflective competencies and readiness for continuous learning. This set of competencies emphasizes the relevance of reflective conduct in teaching, highlighting the need for self-evaluation and continuous adjustment of professional practice. Essential values and attitudes such as critical and self-critical thinking, adaptability, creativity, intellectual curiosity and commitment to lifelong learning and professional development are highlighted. Among the core values promoted are professionalism, excellence, integrity and responsibility towards students, society, oneself and one's career path. On the other hand, the European Commission (2013) has developed a set of competencies for European teachers, among which we list those interconnected in meaning with the term reflexivity: the adoption of a critical attitude towards one's own teaching practice (by analyzing, evaluating and questioning the work), openness to collaboration, teamwork and professional networks, and a sense of self-efficacy (Șerbănescu et al., 2020). Drawing a parallel between the national and European visions, we conclude the following (Table 1).

Table 1. Comparative analysis: reflexivity in the teacher's professional profile - between the national and the European vision (own conception)

National vision on reflexivity (The professional profile and standards of the pre-university teacher, by career stages and educational levels, 2024)	European vision on reflexivity (European Commission, 2013)	Similarities between the two perspectives
The focus placed on the ethical and axiological dimension of the profession, emphasizing values such as professionalism, integrity, responsibility and excellence	The emphasis is on openness to professional cooperation , participation in educational networks and exchange of good practices.	Self-assessment and critical analysis of one's own practice Commitment to lifelong learning and professional development Promotion of personal responsibility for learning and student development Critical and self-critical thinking Self-efficacy

As Cucuș (2024, p. 38) reports, “critical self-reflection, in relation to one's own educational activity (including in relation to professional development), is one of the components that define teachers' professional competence”. Both national and European visions emphasize the centrality of reflexivity in defining teaching professionalism. Collaborative reflection helps deepen the analysis of one's own practice through multiple approaches and facilitates the identification of common solutions. This approach is a collective learning process that offers numerous opportunities for adjustment and refinement (Foong et al., 2018). Qualitative research suggests that teachers who collaborate in teaching learn from each other and adapt their pedagogical strategies as a result of engaging in joint learning and the sharing of practices (Albrecht, 2003; Vasquez-Montilla et al., 2007). Thus, integrating personal values with collaborative practices provides a solid framework for the continuous development of teachers and for enhancing the quality of teaching as a whole.

Akbari (2008) emphasizes that reflective practice is characterized by teachers' ability to retrospectively analyze their own thoughts and actions, especially those carried out automatically in routine activities. In a study

carried out in Pakistan, Azeem (2011) found that in most teacher education institutions, beginners were not familiar with techniques for reflecting on their own teaching methods before, during and after conducting lessons. This deficit highlights the pressing need to develop reflective competencies among teachers. In this regard, Zeichner & Liston (2014) argue that teachers need to be supported in the process of exploring ways to critically and consciously harmonize both personal motivations and pedagogical rationales in order to optimize the methodological decisions adopted in the educational process. Kramer (2018) highlights the favorable impact of reflective practice on the professional development of teachers. In this context, it is essential for beginning teachers to go through a continuous cycle of planning, implementation and reflection in order to optimize teaching strategies.

Reflexivity is a topic of interest and has been critically addressed by many researchers over the years. Much of the literature on the improvement of professional work as a result of reflective practice dates back to the 1980s (Bolin, 1988; Lalik, Niles & Murphy, 1989; Munby & Russell, 1989), as well as studies on the implementation of professional development programs in which professionals learn the competencies necessary to instill reflective competencies in their followers (Applegate, Shaklee, & Hutchinson, 1989; Bean & Zulich, 1989; Elbaz, 1988; Korthagen, 1988; LaBoskey, 1989; Zeichner, 1987). Moreover, NotIke & Brennan (1988) called for the need for further investigation of reflexivity as part of the instructional-educational process. As a result, critical attributes that might indicate a teacher's stance towards reflection are investigated at a systemic level: identification of a possible problem, derived from a concrete situation, followed by defining it in an explicit way and signifying it; generation of possible solutions to the identified problem, through a critical examination of one's own professional actions and grounding them on theories, hypotheses supported by the practitioner; testing the solutions against the effects and consequences in terms of student outcomes and learning itself from the reflective practice, signifying the professional context in which the problem was identified (Copeland et al., 1993).

Teachers who practice systematic reflection on their own teaching are those who have the resources to revise and improve their instructional practices in order to optimize learning. They exhibit an enhanced ability to respond to the diversity of students' learning styles, thus contributing to the creation of a high quality instructional setting (Afghani & Ferdeowsi, 2015). The reflective teacher, according to Bocoş (2002, p.88) is “a reflective practitioner, an educational professional who reflects on the educational actions taken, who forms skills to make rational choices, and who adapts

and orients the educational act to the circumstances". A reflective practitioner can be involved in types of thinking such as (Zahid, 2019):

- A situation perceived as positive, which generated an optimistic attitude towards one's own professional activity;
- An educational event in which the active involvement of the teacher was perceived as having a significant impact on the development of students' knowledge;
- An experience perceived negatively, marked by dysfunctionality or unsatisfactory results in the teaching process;
- A circumstance considered difficult to manage, which generated a feeling of lack of control over the educational situation;
- A moment of dissonance or incoherence that stimulated critical reflection and questioning of the context: "What is happening in this situation? "

These types of situations, highlighted by Zahid (2019), demonstrate the complexity of the reflective process in educational practice. The reflective practitioner is not limited to analyzing successes or failures, but develops the capacity to extract valuable pedagogical meanings from a wide range of experiences, whether positive, challenging or ambiguous. Therefore, reflection becomes an essential tool in the continuous self-training of teachers, contributing to the consolidation of a conscious, adaptive and improvement-oriented educational practice. And such a pedagogical approach requires reflective attitudes, which, according to Rodgers (2002) and Farrell (2012), reflect the teacher's willingness to act as a person open to new perspectives, characterized by integrity and a high degree of professional and ethical responsibility. These attitudes will enable the reflective practitioner to evaluate their progress in the act of instruction and implement effective, dynamic and interactive strategies in their own classrooms (Atherson, 2005; Rarieya, 2005). Asking questions such as "what?" and "why?" in the teaching process fosters the development of a critical awareness of professional practices, contributing to the enhancement of teachers' autonomy and professional responsibility. In support of this reflective approach, Mathew et al. (2017) identify a number of effective strategies, such as the use of reflective journaling, collaborative learning, lesson recording, feedback from teacher educators, peer observation, student feedback and action research. Thus, students are also encouraged to reflect on their own learning experiences (Davis, 2006; Davis, 2006; Maclellan, 2004; Mair, 2012; Tsang, 2011), actively involving them and transforming them into collaborative educational agents. In this regard, teachers must provide explicit instruction on metacognitive skills and processes, to

integrate reflective moments into the classroom, and to encourage a style of interaction characterized by openness, responsiveness and constructive dialogue (Le Cornu & Peters, 2005).

Specialized studies (Korthagen & Wubbels, 1995) demonstrate that the formative value of reflexivity in the teaching career is wide-ranging: from developing critical thinking among learners, to identifying the link between theory and practice, developing students' communication skills and understanding the complexity of the teaching career:

- Reflective teachers develop more effective interpersonal relationships with students than other teachers.
- Reflective teachers show a high level of job satisfaction.
- Reflective teachers consider it essential that their students learn through autonomous exploration and organization of information.
- Reflective teachers have previously been encouraged to structure the experiences and problems they face.
- Reflective teachers display a strong sense of personal security and self-efficacy.
- Experienced teachers with a high degree of self-efficacy focus their teaching reflections on students' progress, whereas those with low self-efficacy focus their reflections on themselves.
- Future reflective teachers appear to be able to discuss or write about their educational experiences with ease.

All these formative aspects of reflexivity are interconnected with feedback. Feedback provided by learners is a catalyst for reflection, providing teachers with an authentic perspective on how teaching strategies, relationships or content delivered are perceived and assimilated by learners. Effective feedback supports teachers in improving their teaching performance (Yorke, 2003). It is essential that teachers receive clear information about learners' progress in order to adjust and refine teaching strategies accordingly. A well-implemented feedback system contributes to the development of self-evaluation (reflection) in the learning process, while stimulating positive motivational beliefs and increasing self-esteem (Nicol and Macfarlane-Dick, 2006). Some studies (Yu, 2012) report that teachers are more motivated when they perceive that their work is valued. Based on the feedback received from the learners and on their own findings, teachers' reflective behaviors can manifest themselves at several stages of the educational process. In the transition from reflection to action, teachers re-examine the coherence between teaching strategies, activities, materials used and assessment methods about the initial lesson plan. In the 'in action' reflection phase, teachers adjust their pedagogical interventions in real time,

using simple questions to identify pupils' difficulties and constantly maintaining awareness of the classroom context during teaching. Reflecting on action involves post-factum analysis of the effectiveness of the teaching approach and pupils' progress. Finally, reflection 'for action' is concerned with obtaining relevant feedback, identifying opportunities for professional collaboration, and adopting and integrating innovative methods into instructional practice (Soisangwarn & Wongwanich, 2013).

By understanding and applying the four dimensions of reflection - from reflection prior to action, to reflection in and on action, culminating in reflection for action - teachers can build an informed, adaptive and progress-oriented professional practice. These stages reflect a complex process of pedagogical self-regulation, whereby teachers critically analyze, adjust and constantly reconfigure the instructional strategies used. Thus, reflective behaviors become not only indicators of professional maturity but also essential factors in promoting learner-centred education supported by innovation and collaboration.

Participants

The research sample consisted of 327 respondents distributed into the following categories: first-year students in bachelor's programs in Educational Sciences– 139 respondents (42.5%); second-year students in bachelor's programs in Educational Sciences– 55 respondents (16.8%); third-year students in bachelor's programs in Educational Sciences– 45 respondents (13.8%); master's students in Educational Sciences– 24 respondents (7.3%); bachelor's studies, students enrolled in the psychopedagogical module (training module for students pursuing a teaching career), in the fields of Letters, Music, Mathematics – Computer Science – 64 respondents (19.6%).

Research method and instrument

The research method used was the survey, typical of the quantitative research paradigm, and a questionnaire was employed. The questionnaire items are organized using a 5-point Likert scale from 1 – to a very small extent, to 5 – to a very large extent, and aim to measure two variables: the independent variable represented by the teachers' reflexivity perceived by pre-service teachers and the dependent variable, measured by the development of self-reflexivity competencies.

The proposed questionnaire was originally designed, with items being structured in accordance with the set of generic skills within the

professional profile of the teaching staff in pre-university education, Domain 5: ethics, reflexivity, and lifelong learning.

The developed questionnaire was subjected to a pre-test with a sample of 186 respondents, following which the necessary optimizations were formulated. The value of the internal consistency coefficient, Cronbach's Alpha, is $\alpha = .94$ for 22 items ($M = 3.61$, $SD = .67$). According to Taber (2018), the reported value signifies excellent internal consistency.

Procedures

Data collection was carried out between March and April 2025, with the research tool being available through the Google Forms platform. Convenience and snowball sampling were used in this research.

Data analysis

The research variables were represented by the teachers' reflexivity perceived by the pre-service teachers and the development of self-reflexivity competencies in the case of the pre-service teacher participants in the research. The data specific to each variable were collected via the Google Forms platform, processed in the Excel program, and subsequently transferred to the Jamovi statistical program. Along with the descriptive statistics used to measure the specific parameters, the following statistical operations were also used: ANOVA analysis, correlation and regression analysis.

Results

The means, standard deviations, standard error, minimum, maximum, skewness and kurtosis for each variable are presented in Table 2. The value of skewness varies between .07 and -.51, and the value of kurtosis varies between -.73 and -.69. Both ranges of values were statistically accepted. Therefore, after the normality of the research variables was analyzed, all skewness and kurtosis values were within an acceptable range.

Table 2. Descriptive Analysis of Research Variables

	Perceived teacher reflexivity score	Self-reflexivity competencies score
Number of respondents	303	303
Missing	0	0
Mean	37.66	24.25
Median	37	24
Standard deviation	9.28	4.85
Minimum	17	12
Maximum	55	30
Skewness	0.07	-0.51
Std. error skewness	0.14	0.14
Kurtosis	-0.73	-0.69
Std. error kurtosis	0.28	0.28

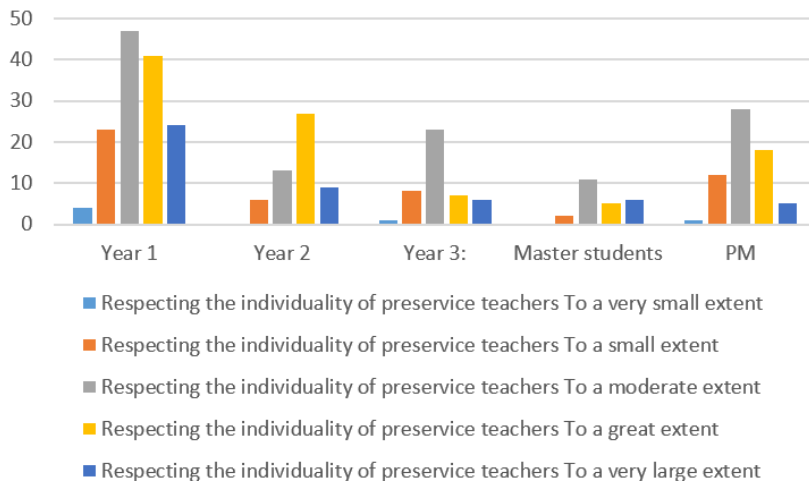
Teacher reflexivity perceived by pre-service teachers

Table 3 indicates the respondents' opinion on the perception of teachers' reflexivity from the perspective of several defining elements of this concept. Respecting the individuality of pre-service teachers by teachers was perceived to a large extent by respondents (*Graph 1*), and sharing experiences/ideas with a formative role (*Graph 2*), as well as encouraging the expression of different points of view (*Graph 3*) were perceived to a very large extent by pre-service teachers participating in the research. Demonstrating that the teacher himself represents a model of reflexivity was a characteristic perceived to a large and very large extent.

The characteristics of teachers' reflexivity perceived to a very small extent were: concern about the way pre-service teachers learn, requesting feedback from pre-service teachers, and concern about the professional situation of pre-service teachers.

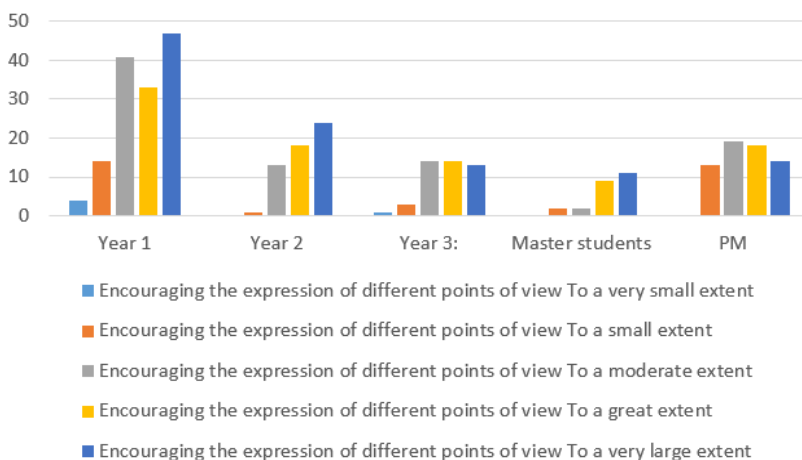
In conclusion, pre-service teachers perceive more easily the more concrete components, visible in the current practices of teachers. As they advance in training, they become *more skilled in identifying the components of reflective competence*.

Graph 1. Respondents' opinion on the extent to which teachers respect their individuality (*PM - Psychopedagogical Module)



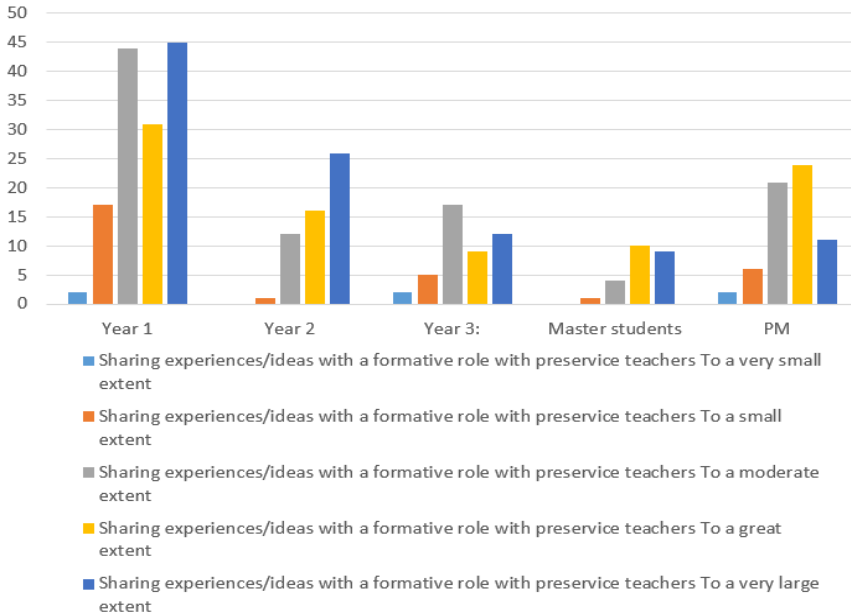
Across all categories of respondents, it was found that teachers' respect for individuality was perceived in most cases to a moderate extent, as well as to a large and very large extent.

Graph 2. Respondents' opinion on the extent to which teachers share with them ideas/experiences with a formative role (*PM - Psychopedagogical Module)



Sharing ideas/experiences with a formative role by teachers was a characteristic perceived mainly to a large and very large extent across all categories of respondents.

Graph 3. Respondents' opinion on the extent to which teachers encourage the expression of different points of view
 (*PM - Psychopedagogical Module)



Encouraging different points of view represented an important characteristic of the reflective teacher, being predominantly perceived to a moderate, large, and very large extent by the respondents participating in the research.

Table 3. Teacher reflexivity perceived by pre-service teachers

The characteristic of reflexivity	The extent to which the characteristic of teacher reflexivity was perceived and the corresponding number of respondents Note: PM – Psychopedagogical mode				
	To a very small extent	To a small extent	To a moderate extent	To a great extent	To a very large extent
Showing an open attitude towards students'/master's students' questions	Year 3: 1 PM: 1	Year 1: 11 Year 3: 2 Master students: 2 PM: 4	Year 1: 46 Year 2: 17 Year 3: 15 Master students: 3 PM: 28	Year 1: 35 Year 2: 21 Year 3: 14 Master students: 9 PM: 19	Year 1: 47 Year 2: 17 Year 3: 13 Master students: 10 PM: 10
Respecting the individuality of students/master's students	Year 1: 4 Year 3: 1 PM: 1	Year 1: 23 Year 2: 6 Year 3: 8 Master students: 2 PM: 12	Year 1: 47 Year 2: 13 Year 3: 23 Master students: 11 PM: 28	Year 1: 41 Year 2: 27 Year 3: 7 Master students: 5 PM: 18	Year 1: 24 Year 2: 9 Year 3: 6 Master students: 6 PM: 5
Concern about how students/master's students learn	Year 1: 12 Year 2: 1 Year 3: 2 Master students: 1 PM: 6	Year 1: 30 Year 2: 8 Year 3: 17 Master students: 4 PM: 20	Year 1: 48 Year 2: 25 Year 3: 14 Master students: 6 PM: 24	Year 1: 33 Year 2: 14 Year 3: 9 Master students: 8 PM: 7	Year 1: 16 Year 2: 7 Year 3: 3 Master students: 5 PM: 7
Requesting feedback from students/master's students	Year 1: 11 Year 3: 2 Master students: 1 PM: 9	Year 1: 27 Year 2: 3 Year 3: 9 Master students: 2 PM: 19	Year 1: 36 Year 2: 16 Year 3: 17 Master students: 3 PM: 17	Year 1: 35 Year 2: 17 Year 3: 11 Master students: 7 PM: 12	Year 1: 30 Year 2: 19 Year 3: 6 Master students: 11 PM: 7
Easy adaptation to professional changes	Year 1: 3 Year 3: 1 Master students: 1 PM: 3	Year 1: 23 Year 2: 4 Year 3: 12 Master students: 2 PM: 17	Year 1: 54 Year 2: 20 Year 3: 16 Master students: 6 PM: 29	Year 1: 36 Year 2: 23 Year 3: 10 Master students: 10 PM: 10	Year 1: 23 Year 2: 8 Year 3: 6 Master students: 5 PM: 5

Pre-service Teachers' Perception regarding Reflective Competence
Mihaela VOINEA et al.

Investing in his/her professional development	Year 1: 4 Year 2: 1 Year 3: 1	Year 1: 15 Year 2: 2 Year 3: 4 Master students: 1 PM: 13	Year 1: 54 Year 2: 19 Year 3: 18 Master students: 4 PM: 26	Year 1: 37 Year 2: 18 Year 3: 13 Master students: 10 PM: 16	Year 1: 29 Year 2: 15 Year 3: 9 Master students: 9 PM: 9
Cooperation with other colleagues	Year 1: 3 Year 2: 1 Year 3: 1 PM: 1	Year 1: 26 Year 2: 5 Year 3: 13 Master students: 2 PM: 13	Year 1: 44 Year 2: 18 Year 3: 16 Master students: 5 PM: 27	Year 1: 41 Year 2: 20 Year 3: 11 Master students: 10 PM: 18	Year 1: 25 Year 2: 11 Year 3: 4 Master students: 7 PM: 5
Concern about the professional situation of students/master's students	Year 1: 19 Year 2: 2 Year 3: 5 PM: 9	Year: 37 Year: 8 Year 3: 14 Master students: 2 PM: 18	Year 1: 41 Year 2: 23 Year 3: 14 Master students: 6 PM: 19	Year 1: 26 Year 2: 14 Year 3: 9 Master students: 11 PM: 10	Year 1: 16 Year 2: 8 Year: 3 Master students: 5 PM: 8
Demonstrating that he/she is a model reflective teacher	Year 1: 8 Year 3: 3 Master students: 1 PM: 2	Year 1: 24 Year 2: 5 Year 3: 7 Master students: 2 PM: 12	Year 1: 38 Year 2: 16 Year 3: 19 Mater students: 4 PM: 26	Year 1: 43 Year 2: 20 Year 3: 10 Master students: 11 PM: 16	Year 1: 26 Year 2: 14 Year 3: 6 Master students: 6 PM: 8
Sharing experiences/ideas with a formative role with students/master's students	Year 1: 2 Year 3: 2 PM: 2	Year 1: 17 Year 2: 1 Year 3: 5 Master students: 1 PM: 6	Year 1: 44 Year 2: 12 Year 3: 17 Master students: 4 PM: 21	Year 1: 31 Year 2: 16 Year 3: 9 Master students: 10 PM: 24	Year 1: 45 Year 2: 26 Year 3: 12 Master students: 9 PM: 11
Encouraging the expression of different points of view	Year 1: 4 Year 3: 1	Year 1: 14 Year 2: 1 Year 3: 3 Master students: 2 PM: 13	Year 1: 41 Year 2: 13 Year 3: 14 Master students: 2 PM: 19	Year 1: 33 Year 2: 18 Year 3: 14 Master students: 9 PM: 18	Year 1: 47 Year 2: 24 Year 3: 13 Master students: 11 PM: 14

Table 4. Respondents' opinion on the development of self-reflexivity competencies

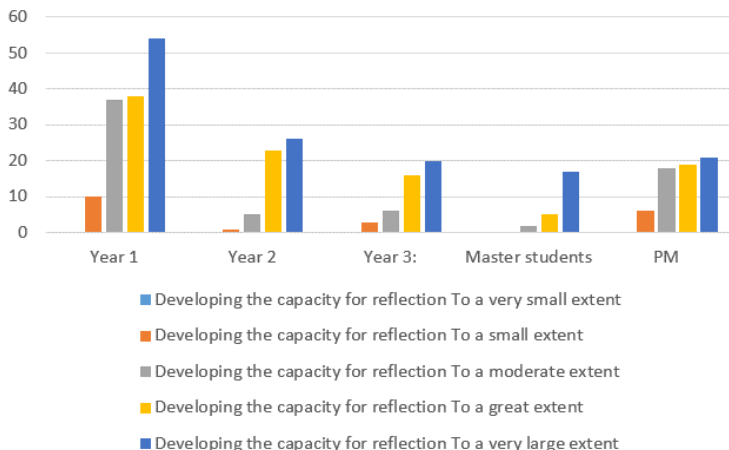
Competence	Respondents' opinions on the development of competencies as a result of teacher reflexivity				
	Note: PM – Psychopedagogical mode				
	To a very small extent	To a small extent	To a moderate extent	To a great extent	To a very large extent
Developing critical thinking		Year 1: 6 Year 2: 1 Year 3: 2 PM: 4	Year 1: 45 Year 2: 8 Year 3: 9 Master students: 2 PM: 22	Year 1: 41 Year 2: 20 Year 3: 16 Master students: 8 PM: 21	Year 1: 47 Year 2: 26 Year 3: 18 Master students: 14 PM: 17
Identifying the link between theory and practice		Year 1: 9 Year 3: 2 PM: 5	Year 1: 34 Year 2: 10 Year 3: 10 Master students: 1 PM: 22	Year 1: 45 Year 2: 22 Year 3: 16 Master students: 9 PM: 17	Year 1: 51 Year 2: 23 Year 3: 17 Master students: 14 PM: 20
Developing self-assessment capacity	PM: 2	Year 1: 17 Year 2: 1 Year 3: 3 PM: 5	Year 1: 31 Year 2: 7 Year 3: 8 Master students: 4 PM: 18	Year 1: 36 Year 2: 21 Year 3: 17 Master students: 6 PM: 18	Year 1: 55 Year 2: 26 Year 3: 17 Master students: 14 PM: 21
Developing the capacity for reflection		Year 1: 10 Year 2: 1 Year 3: 3 PM: 6	Year 1: 37 Year 2: 5 Year 3: 6 Master students: 2 PM: 18	Year 1: 38 Year 2: 23 Year 3: 16 Master students: 5 PM: 19	Year 1: 54 Year 2: 26 Year 3: 20 Master students: 17 PM: 21

Pre-service Teachers' Perception regarding Reflective Competence
Mihaela VOINEA et al.

Developing expression skills	Year 2: 1	Year 1: 9 Year 2: 1 PM: 5	Year 1: 26 Year 2: 9 Year 3: 10 Master students: 2 PM: 16	Year 1: 44 Year 2: 18 Year 3: 17 Master students: 6 PM: 27	Year 1: 60 Year 2: 26 Year 3: 18 Master students: 16 PM: 16
Understanding the complexity of the teaching profession		Year 1: 12 Year 2: 1 Year 3: 1 PM: 7	Year 1: 23 Year 2: 6 Year 3: 8 Master students: 3 PM: 19	Year 1: 39 Year 2: 19 Year 3: 20 Master students: 6 PM: 14	Year 1: 65 Year 2: 29 Year 3: 16 Master students: 15 PM: 24

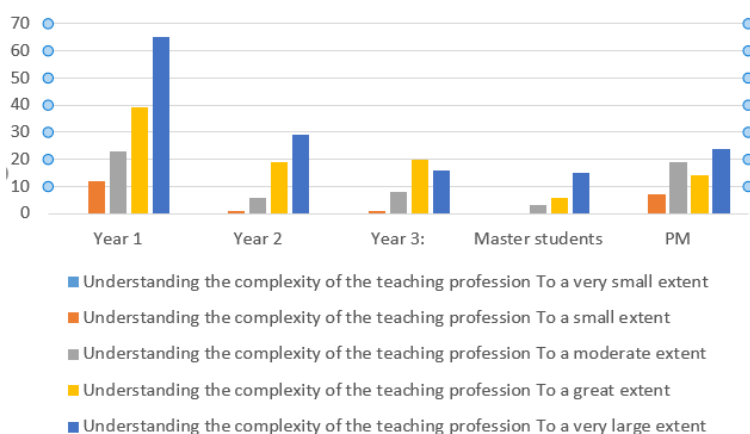
Table 4 shows the respondents' opinion on the development of self-reflexivity competencies as a result of how teachers' reflexivity was perceived. Respondents appreciated that teachers' perceived reflexivity within the framework of instructional-educational activities contributes greatly to the development of the capacity for reflection (*Graph 4*), the development of expression skills (*Graph 5*) and to understanding the complexity of the teaching profession (*Graph 6*).

*Graph 4. Respondents' opinion on the extent to which the presence of reflective teachers contributes to the development of reflective capacity (*PM - Psychopedagogical Module)*



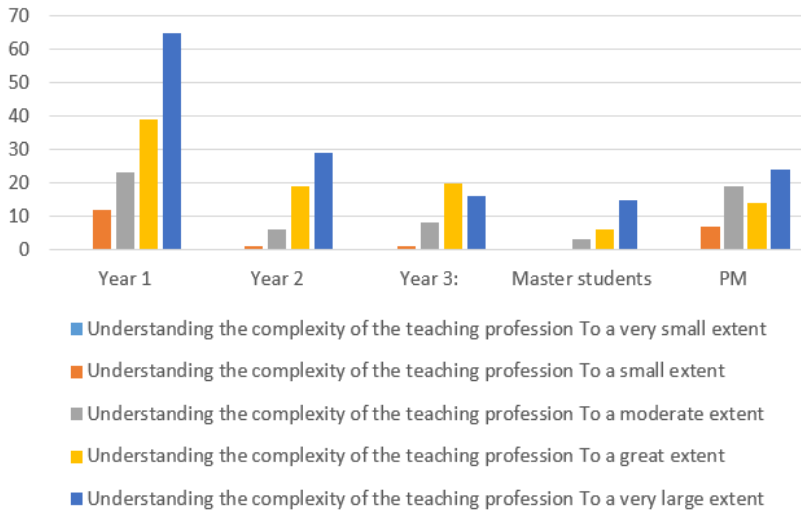
The ability to reflect on the transmitted content was assessed as being formed to a moderate extent, to a large extent and to a very large extent by the presence of reflective teachers within the instructional-educational activities.

*Graph 5. Respondents' opinion on the extent to which the presence of reflective teachers contributes to the development of expression skills (*PM - Psychopedagogical Module)*



Expression skills were appreciated as being shaped to a large and very large extent by the presence of reflective teachers.

Graph 6. Respondents' opinion on the extent to which the presence of reflective teachers contributes to understanding the complexity of the teaching profession
 (*PM - Psychopedagogical Module)



The complexity of the teaching profession was better understood to a moderate extent, to a large extent and to a very large extent when respondents perceived teachers as reflective.

To identify the level of perceived teachers' reflexivity, the score variable "Perceived teachers' reflexivity" was transformed into the categorical variable "Perceived reflexivity level", thus identifying the level of perceived reflexivity according to each category of respondents in the research sample. Table 5 indicates that pre-service teachers from years 1 and 2, as well as pre-service teachers from the psychopedagogical module, perceived teachers' reflexivity at a low level, while pre-service teachers from year 2 preparing for a teaching career perceived teachers' reflexivity at a high level. This verifies the hypothesis that *the perception of teachers' reflexivity becomes more pronounced as pre-service teachers advance in their professional training.*

Table 5. Distribution of perceived level of reflexivity by year of study/ study program

Level of perceived reflexivity	Year of study/Study program	Number of respondents	% of Total	Cumulative %
High level	Year 1	65	20%	20%
	Year 2	39	12%	32%
	Year 3	14	4%	36%
	Psychopedagogical mode	23	7%	48%
Low level	Year 1	74	23%	71%
	Year 2	16	5%	76%
	Year 3	31	9%	85%
	Psychopedagogical mode	41	13%	100%

Variance of teacher reflexivity perceived by pre-service teachers and the development of self-reflexivity competencies depending on the year of study

To determine how pre-service teachers' perceived teacher reflexivity varies by year of study, an ANOVA analysis of variance was performed between the two variables. This analysis revealed a statistically significant effect of year of study ($(F = 3, 127.45) = 7.01, p < .001$) on perceived teacher reflexivity. (Table 6)

Table 6. ANOVA analysis of variance of perceived teacher reflexivity by year of study

	F-test value	Degrees of freedom between groups	Degrees of freedom within the group	Pearson correlation coefficient value (p)
Perceived teacher reflexivity score	7.01	3	127.45	<.001

Table 7 shows the mean of teachers' reflexivity perceived by pre-service teachers according to the year of study. The mean values of the variable were taken into account for pre-service teachers from year 2 ($M = 41.58, SD = 7.80$) and year 3 ($M = 36.22, SD = 9.00$) because the difference between the number of respondents belonging to these two categories is not considerable. It was found that as pre-service teachers approach the completion of their undergraduate studies, the level of teachers' reflexivity perceived in the framework of instructional-educational activities decreases. As a result of the differences between the categories of respondents in terms

of their number, the hypothesis that *teachers' reflexivity perceived by pre-service teachers varies depending on the year of study*, was only partially supported by the data.

Table 7. Distribution of scores of the variable *perceived teacher reflexivity* according to the year of study

	Year of study	Number of respondents	Mean	Standard deviation	Standard error of the mean
Perceived teacher reflexivity score	Year 1	139	37.75	9.92	0.84
	Year 2	55	41.58	7.80	1.05
	Year 3	45	36.22	9.00	1.34
	Psychopedagogical mode	64	35.11	8.18	1.02

To determine how the development of pre-service teachers' self-reflexivity competencies varies according to the year of study, an ANOVA analysis of variance was performed between the two variables. Following this analysis, a statistically significant effect of the year of study factor was obtained ($(F = 3, 128.48) = 4.17, p = .007, p < .05$). (Table 8)

Table 8. Distribution of the scores of the variable *development of self-reflexivity competencies* according to the year of study

	F-test value	Degrees of freedom between groups	Degrees of freedom within the group	Pearson correlation coefficient value(p)
Self-reflexivity competencies score	4.17	3	128.48	0.007

Table 9 shows the average development of self-reflexivity competencies by year of study. The average values of the variable were taken into account for pre-service teachers in year 2 ($M = 25.78, SD = 4.01$) and year 3 ($M = 24.73, SD = 4.22$) because the difference between the number of respondents belonging to these two categories is not considerable. It was found that as pre-service teachers approach the completion of their undergraduate studies, the level of development of self-reflexivity competencies decreases as a result of exposure to reflective teachers. As a result of the differences between the categories of respondents in terms of their number, the hypothesis that *the development of self-reflexivity competencies among pre-service teachers varies depending on the year of study* was only partially supported by the data.

Table 9. Distribution of the scores of the variable development of self-reflexivity competencies according to the year of study

	Year of study	Number of respondents	Mean	Standard deviation	Standard error of the mean
Self-reflexivity competencies score	Year 1	139	24.07	5.13	0.44
	Year 2	55	25.78	4.01	0.54
	Year 3	45	24.73	4.22	0.63
	Psychopedagogical mode	64	22.97	4.99	0.62

The link between teachers' reflexivity perceived by pre-service teachers and the development of self-reflexivity competencies

To identify the link between teachers' perceived reflexivity and the development of self-reflexivity competencies as a result of exposure to reflective teachers, a correlational analysis was conducted between the aforementioned variables. A positive, moderate, statistically significant association ($r = .52$, $p < .001$) was demonstrated between teachers' perceived reflexivity and the development of self-reflexivity competencies. (Table 10)

Table 10. Correlation analysis between teachers' reflexivity perceived by pre-service teachers and self-reflexivity competencies development

		Perceived teacher reflexivity score	Self-reflexivity competencies score
Perceived teacher reflexivity score	Pearson's r	—	
	df	—	
	p-value	—	
Self-reflexivity competencies score	Pearson's r	0.52	—
	df	301	—
	p-value	<.001	—

To determine how the development of pre-service teachers' self-reflexivity competencies varies depending on the extent to which they perceive teachers as reflective, linear regression was performed between the two variables. The regression coefficient R, which represents a correlation coefficient with the value .52 ($R = .52$), indicated a moderate association between the aforementioned variables, statistically significant ($p < .001$). (Table 11) The value of the regression coefficient $R^2 = .27$ indicates that 27% of the variance in the development of pre-service teachers' self-reflexivity competencies is due to the teachers' perceived reflexivity in the context of instructional-educational activities. (Table 11) Based on the correlation and regression analyses, it was found that the hypothesis that

Teachers' reflexivity perceived by pre-service teachers is associated with the development of self-reflexivity competencies was supported by the data.

Table 11. Linear regression between the variable of teachers' reflexivity perceived by pre-service teachers and the development of self-reflexivity competencies

Statistical model	Regression coefficient R	Percentage value of the regression coefficient R ²
1	0.52	0.27

Note. Models estimated using a sample size of N=303

Qualitative analysis of respondents' responses regarding teacher reflective conduct

The qualitative analysis of the data obtained from the respondents has captured those elements that they consider important in relation to the reflective behavior of the teacher, beyond those contained in the questionnaire developed by the researchers. The interpretation of these qualitative data was done through the MAXQDA program.

In this analysis, open coding was performed for each text passage, in which the data were decomposed, examined, compared, conceptualized and ranked, and axial coding, in which the data were reassembled according to the frequency of responses and their relevance.

In Table 12, the system of generated codes, vehemently supported by passages of text provided by the respondents and the frequency of codes, can be observed. Invalid, inappropriate, inadequate responses as per the requirement were discarded. This category includes either borderline responses or responses which indicate that the instrument was sufficiently comprehensive and there are no other features to mention.

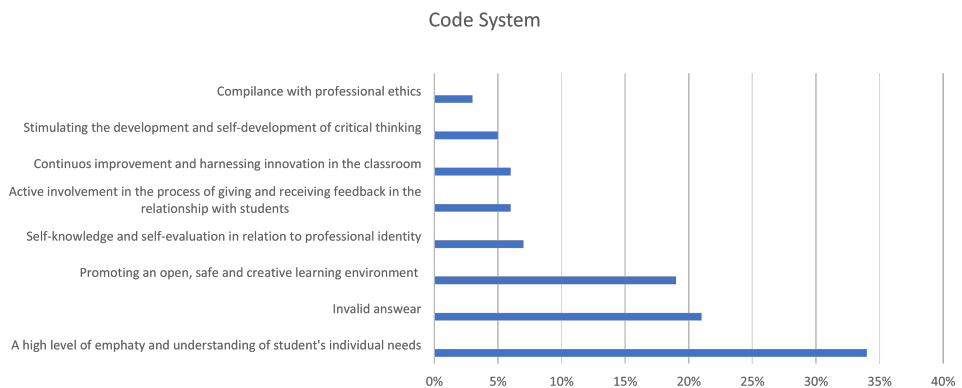
Table 12. Respondents' opinion on teachers' reflective conduct

Code System	Frequency	
Code System		368
Stimulating the development and self-development of critical thinking	<p>”Reflective teacher leadership involves critical thinking for continuous improvement of the educational process.”</p> <p>”A reflective teacher critically analyzes his or her own practice, adapts methods according to students' needs, and is constantly seeking to learn and develop. They also demonstrate critical thinking, thus ensuring an effective and relevant educational process.”</p> <p>”Reflecting on how external factors (social, emotional, cultural) influence the learning process helps the teacher to adapt his/her approach.”</p>	17
Self-knowledge and self-evaluation in relation to professional identity	<p>”Reflective teacher leadership involves constant self-evaluation, adaptability, openness to feedback and continuous learning. It is essential for improving teaching and professional development. ”</p> <p>”Self-evaluation of own actions”</p> <p>”From my perspective, reflective teacher leadership involves constant self-evaluation and adaptability, ensuring effective teaching and a learning environment appropriate to the needs of pupils/students. ”</p> <p>”The teacher needs to develop self-evaluation in order to continuously improve his/her teaching practice. Reflection on the emotional and motivational impact on students is also essential for an effective learning environment”</p>	24
Continuous improvement and harnessing innovation in the classroom	<p>”Implement modern techniques and personalize the teaching process to increase student motivation. Integrate relevant topics from society into teaching to prepare students for the realities of the</p>	21

Pre-service Teachers' Perception regarding Reflective Competence
Mihaela VOINEA et al.

	<p>classroom. ”</p> <p>”The reflective teacher is always looking for new methods, pedagogical theories and educational technologies. ”</p> <p>”It is important that the teacher remains connected to new educational demands and technological innovations. ”</p>	
Compliance with professional ethics	<p>”The importance of fairness in evaluation”</p> <p>”A reflective teacher must constantly analyze his or her own decisions from an ethical perspective, ensuring that they have a positive impact on students.”</p> <p>”Fairness between students”</p>	13
Active involvement in the process of giving and receiving feedback in the relationship with students	<p>”Openness to feedback and flexibility”</p> <p>”Ability to give constructive feedback”</p> <p>”Open communication and constructive evaluation/feedback.”</p> <p>”Asks for student opinions.”</p>	22
Promoting an open, safe and creative learning environment	<p>”Open to student questions”</p> <p>”Be open to change, respect student opinion and encourage student expression”</p> <p>”Authenticity, social responsibility, emotional flexibility, awareness of the impact of education.”</p> <p>”Ability to take students out of their comfort zone.”</p> <p>”Assertive communication”</p>	68
A high level of empathy and understanding of students' individual needs	<p>”Empathy and mutual understanding”</p> <p>”Understanding students' difficulties and adjusting the approach to better support them.”</p> <p>”The ability to adapt to the needs of the class of pupils”</p> <p>”Empathy and attention to pupils' needs”</p> <p>”Having an empathic attitude with students/ pupils, understanding their particular problems”</p>	125
Invalid answer		78

Graph 7. Respondents' opinion on teachers' reflective conduct



The analysis of the respondents' answers emphasizes the fundamental role of reflection in the continuous development of teachers' professional competences, in particular in terms of critical thinking, self-awareness and self-evaluation. According to the participants, a reflective educational leader adopts a constant process of self-evaluation, which is essential for improving teaching practice and adapting pedagogical methods to the needs of pupils. The integration of educational innovations and the use of modern technologies are also considered key strategies for creating a dynamic and relevant learning environment. In terms of professional ethics, respondents emphasized the importance of fair evaluation and constant review of educational decisions from an ethical perspective. On the other hand, the promotion of an open, safe and creative learning climate, together with an increased empathy towards the individual needs of students, are essential aspects for the formation of an educational environment that supports their holistic development. Thus, a relationship of interdependence is formed between these dimensions, which ensures not only the success of the educational process, but also the continuous development of teachers' professional identity.

In terms of the frequency of responses, it can be seen that students claim the need for a high level of empathy when relating to a reflective teacher (34%). Respondents also emphasize that a reflective teacher is one who implements a safe and creative open learning environment (19%).

Although in smaller percentages (3%), respondents associate that being a reflective teacher implies a constant concern, an ethical review of professional behavior and conduct.

Limits and discussions

The purpose of this research is to identify pre-service teachers' perceptions of teachers' reflexivity and how it contributes to the development of self-reflexivity competencies. The data collected provides an overview of both the main characteristics of reflective teachers perceived by pre-service teachers and the specific self-reflexivity competencies formed as a result of the presence of reflective teachers in the educational training of the respondents.

The results obtained from the data collection and their interpretation support the aspects mentioned in the specialized literature, according to which teachers must pay attention to both the educational objectives they aim to achieve within the framework of instructional-educational activities and their attitudes, values, and aspirations in such a way as to demonstrate to pre-service teachers that they are models of reflexivity (Ryan & Webster, 2019). Epistemic reflexivity has also proven to be a powerful tool for teachers to facilitate teaching and sustainable change among learners (Feucht et. al., 2017).

The respondents' opinions on the conduct of reflective teachers from the perspective of professional ethics are also supported by Vargas (2020), who states that reflective practices help teachers become more responsible in transmitting and assessing knowledge. At the same time, the availability of current generations to learn with the help of technology offers the reflective teacher the opportunity to continuously improve their teaching and assessment strategies (Pânișoară et al., 2023).

Reflective competence is formed throughout the academic course, as evidenced by the fact that pre-service teachers in the first year, compared to those in the third year, perceive more nuanced aspects of teachers' reflective competence

A possible explanation of the results obtained is that pre-service teachers encounter different models of teachers, with varying demands and different levels of reflexivity. The aforementioned aspects lead to implications regarding the professional development of current teachers in order to become more visible from the perspective of reflexivity for pre-service teachers.

The first limitation of the study is represented by the numerical differences between the respondent groups, which limits the identification of how the perception of teachers' reflexivity and the development of self-reflexivity competencies vary depending on the year of study or the educational cycle, by reporting to the categories of respondents in this

research. In light of the aforementioned limitation, a research direction considers collecting data for a longer period (3 – 6 months) from respondents belonging to different bachelor's and master's fields. This research direction can provide a global but at the same time profound image of how students and master's students in the medical, technical, and sports fields perceive teachers' reflexivity. The second limitation of the research concerns the qualitative analysis of the answers to the open question, which aimed to identify characteristics of the reflective teacher, distinct from those provided in the questionnaire, according to the respondents. The analysis assumed the elimination of incomplete answers. In response to this limitation, future qualitative research methods will also be applied that allow for careful monitoring of participants by researchers and the more accurate capture of aspects related to teachers' self-reflexivity.

At the moment, this paper is extremely relevant, starting from the researchers' own contributions, from the solid theoethical grounding, in line with current educational policies and we believe that it can be a starting point for future research: identifying/elaborating reflective strategies, creating and testing programs aimed at developing reflective competence among teachers.

Conclusions

The results of this research highlight the following aspects:

The teachers' reflexivity perceived by the respondents mainly considers characteristics such as the teachers' respect for the individuality of pre-service teachers, the sharing of experiences/ideas with a formative role, the encouragement of the expression of different points of view, the demonstration that the teacher himself represents a model of reflexivity, and as a result of the presence of reflective teachers in the educational training of pre-service teachers, it was found that competencies such as reflective capacity, expression skills and understanding the complexity of the teaching profession are mainly formed.

It has been demonstrated that pre-service teachers more easily perceive concrete, visible components of reflective practices in teachers' current behavior. As they advance in training, they become more skilled in identifying the components of reflective competence.

Pre-service teachers in year 3 are characterized by a lower level of teacher reflexivity compared to pre-service teachers in years 1 and 2.

We note that pre-service teachers in older years have a more nuanced perception of teachers' reflective competence, which leads us to the conclusion that as they advance in initial training, the perception of various

professional competencies becomes more analytical. We also note that, as they advance in their professional path, future teachers become more concerned with their training.

Pre-service teachers who perceive teachers as reflective also declare the training to a large or very large extent of competencies that would determine them to become self-reflective both in their teaching activity and in their current or future teaching career.

This association may be because the perception of the teacher as reflective is closely linked to a model teacher that the respondent encountered during his/her educational journey, following him/her to develop professional and implicit self-reflective skills.

These conclusions underline the importance of the teacher model, of the pedagogical practice mentor who makes reflective competence "visible" in their current practice, in their relationships with pre-service teachers. From here, we can formulate a practical conclusion for the initial training of teachers, namely, the training of reflective competence through explicit practices, visible in the behavior of teachers/mentors.

Even though the research instrument captured multiple characteristics of reflective teachers, the open expression of the respondents regarding other defining aspects of the reflective conduct of teachers was also encouraged. The analysis of the responses indicates the highlighting of two categories of competencies that demonstrate reflexivity, namely: socio-emotional competencies operationalized through empathy, flexibility, management of emotions, authenticity, and professional competencies operationalized through professional ethics, constructive perception of feedback, effective teaching, concern for one's image and lifelong education.

While the research instrument captured multiple characteristics of reflective teachers, respondents' open expression of other defining aspects of teachers' reflective behavior was also encouraged. Analysis of the responses indicates that six important aspects emerged: Stimulating the development and self-development of critical thinking; Self-knowledge and self-evaluation in relation to professional identity; Continuous improvement and harnessing innovation in the classroom; Compliance with professional ethics; Active involvement in the process of giving and receiving feedback in the relationship with students; Promoting an open, safe and creative learning environment and A high level of empathy and understanding of students' individual needs.

Informed Consent Statement: The research participants were informed about the publication of the answers provided by them, obtaining informed consent was obtained. Participants were assured of the confidentiality of the data provided by encoding it.

Data Availability Statement: Not applicable

Acknowledgements: The authors would like to thank the participants who were involved in the present research.

Conflicts of Interest: The authors declare no conflict of interest.

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