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Teaching practicums as an ideal setting for the development of teachers-in-training

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ABSTRACT

The objective of the study on which this article is based was to identify the pedagogical knowledge and research skills achieved by a group of teachers-in-training from different discipline areas who undertook a newly developed teaching-practicum program at a Colombian university. This study used a qualitative methodological design. The data collection instruments were documents that were generated from the teaching practicums. These were documents that were filled out by the teachers-in-training, by mentor teachers, and by the practicum supervisor. Documents were collected from 21 undergraduate students (pre-service teachers) from two cohorts. The review and content analysis of the documents was complemented by a focus group in which the teachers-in-training were able to discuss and rank the skills and benchmarks of progress that they considered most important and those that they had most difficulty in achieving. The results illustrate: (i) the central role of teacher education in providing pre-service teachers with the knowledge, skills and attitudes they need to effectively perform the work of teachers; (ii) the education that pre-service teachers receive exerts a powerful influence on their concept of teaching and learning, which in turn affects their pedagogical practice; (iii) teaching practicums provide teachers in training with a valuable opportunity to implement what they have learned in the teacher training process, making the link between the abstract and the concrete more and more visible.

KEYWORDS: Teacher training; undergraduate; pedagogical practice; learning outcomes.

Las prácticas docentes como escenario idóneo para el desarrollo del profesorado en formación

RESUMEN

El objetivo del estudio en el que se basa este artículo fue identificar los conocimientos pedagógicos y las habilidades investigativas alcanzadas por un grupo de docentes en formación de diferentes áreas disciplinarias que emprendieron un programa de práctica docente recién desarrollado en una universidad colombiana. Este estudio utilizó un diseño metodológico cualitativo. Los instrumentos de recolección de datos fueron documentos que se generaron a partir de las prácticas docentes. Estos fueron documentos que fueron llenados por los profesores en formación, por los profesores mentores y por el supervisor de prácticas. Se recopilaron documentos de 21 estudiantes de pregrado (los profesores en formación) de dos cohortes. La revisión y análisis de contenido de los documentos se complementa con un grupo focal en el que los docentes en formación pudieron discutir y clasificar las habilidades y puntos de referencia de progreso que consideraban más importantes y aquellos que tenían más dificultades para lograr. Los resultados ilustran:(i) el papel central de la formación docente al proporcionar a los docentes en formación los conocimientos, las habilidades y las actitudes que necesitan para desempeñar eficazmente el trabajo de los docentes; (ii) la educación que reciben los docentes en formación ejerce una poderosa influencia en su concepto de enseñanza y aprendizaje, lo que a su vez repercute en su práctica pedagógica; (iii) las prácticas brindan a los docentes en formación una valiosa oportunidad para implementar lo aprendido en el proceso de formación docente, haciendo cada vez más visible el vínculo entre lo abstracto y lo concreto.

PALABRAS CLAVE: Formación de maestros; pregrado; práctica pedagógica; resultados de aprendizaje.

Introduction

This article reflects on the need to offer quality initial training to future teachers as one of the essential factors to improve education. In the Colombian case, a large part of the state's actions in recent decades have focused on the one hand, on the implementation of measures that require university education faculties and teachers' colleges to provide rigorous initial training to students, and on the other, in providing postgraduate training and in-service training to practicing teachers. In the framework of the paper, students of an undergraduate degree in teacher education are called teachers-in-training. These students engage in teaching practice (or practicums) outside the university in preschools, elementary and high schools as part of their teacher training.

The objective of the study on which this article is based was to identify the pedagogical knowledge and research skills achieved by a group of teachers-in-training from different discipline areas who undertook a newly developed teaching-practicum

program at a Colombian university. The achievement of learning was measured against the benchmarks and learning outcomes established for the practicum program. In line with proposals such as those of García (1993, 1997, 2012), these benchmarks point to the linkage between teacher training and teaching practice: they are based on the principle that a teacher-researcher in the classroom, committed to solving problems through engagement in action research, is a teacher who contributes effectively to the learning of his or her students. In relation to student learning, the study posed the following questions: What skills, knowledge and attitudes are evidenced by the products produced by teachers-in-training during their teaching practicums? Is there congruence between the skills, knowledge, and attitudes that teachers-in-training demonstrate and the benchmarks and learning outcomes that have been designed and implemented to guide their teaching practicums?

Literature review

The need to offer high-quality teacher training in Colombia.

The issue of teacher training continues to be topical and relevant to all actors involved in the field of education (García, 2012). Indeed, teacher training has gained great importance in current debates due to studies showing that improving the quality of education depends on increasing the quality of the preparation and motivation of classroom teachers (World Bank, 2015, 2017a, 2017b; OECD, 2018, OECD, 2009). There is evidence of the influence that a teacher's capacity and the quality of their teaching has on the learning outcomes of their students (EFA Global Monitoring Report, 2005, UNESCO UIS, 2006).

In the case of Latin America, the literature on teacher training is unclear in terms of the best forms of monitoring teacher training processes. This lack of clarity has resulted in inconsistent approaches and variable quality of teacher training and teaching practicums. This is reflected in 18 Latin American countries performing lower than the average of participating countries in other regions of the world in the Second Regional Comparative and Explanatory Study (SERCE, 2010) of primary education. According to Ávalos (2011), this is a reflection on the quality of education and teacher training in the region, although all factors that affect the quality of education need to be considered in these results. Ávalos's study indicates that teacher training in the region needs to be addressed, particularly the extent to which the quality of training influences the quality of teaching practice and, therefore, the learning outcomes of students. This is in addition to addressing issues related to the structural poverty of many families in the region, and the need for greater investment in physical equipment and resources to support student learning.

Studies on the quality of initial teacher training carried out in Brazil, Colombia and Chile have identified deficiencies in the pedagogical component of teacher training programs that are offered in those countries (Ávalos, 2011; OECD 2018). The results of those studies indicate that national curricular guidelines are not always followed, and that the preparation programs for primary and secondary teachers are fragmented and place little emphasis on what is required for their future work in the classroom. As a result, there are impediments to deepening the disciplinary content. Additionally,

there is a misconception about the origin of the disciplinary character of pedagogical knowledge. This has limited the attention that should be placed on sense-making by teachers-in-training as they refine discipline specific pedagogies in the school context (Ortega, 2017; Perafán, 2013).

There are also many courses in the teacher training curricula on general topics that interfere with the acquisition of key elements that teachers-in-training need to teach the content of the school curriculum effectively (Gatti & Sá Barreto, 2009; Camargo et al., 2007; Ávalos & Matus, 2010; Calvo et al., 2004). In an overview of teacher training programs in Colombia, Flores and Palacios (2018); Palacios (2020); Palacios et al. (2020) indicate that some have an insufficient amount of content related to disciplinary knowledge and corresponding didactic methodologies. To address this, a higher presence is needed of general pedagogical content, of practices for teaching diverse groups of students, and in developing teaching plans for specific disciplinary areas.

To provide information on the context of Colombian education and its legislation, it is necessary to name two documents published by the Colombian Ministry of National Education. Both documents aim to improve the quality of teacher education. The first of these is the Decree Law 2450 (Ministerio de Educación Nacional, 2015), which establishes the conditions of quality that Bachelor programs must comply with. The second is Resolution 2041 (Ministerio de Educación Nacional, 2016), which establishes the competencies that teacher education students must develop during their educational journey.

Ávalos (2011) emphasizes the need to focus on actions that improve the initial teacher training process, such as requiring universities to improve the quality of the programs they offer, imposing higher admission requirements, developing standards to guide curricular reform processes, and implementing mechanisms for the financial and pedagogical support of teacher training programs. In addition, Zeichner (2010) warns about a worldwide pattern affecting the quality of initial teacher training: the commercialisation of teacher preparation, overly prescriptive demands for accountability, excessive control over training curriculum by accrediting agencies, reductions in funding for training programs, and attacks on programs that make an effort to prepare teachers to practice the profession in socially just ways in multicultural or vulnerable contexts.

According to Darling-Hammond, the designers and implementers of educational policies must let go of the idea that learning depends mainly on the ability of the student and recognise that learning depends to a large extent on the preparation and competence of the teacher. It follows then that teachers must be supported to acquire the knowledge they need to teach more effectively (Darling-Hammond, 2017). Darling-Hammond indicates that teachers-in training, need to have knowledge of the subject area, understanding of the cognitive, social, and personal development of students, understanding of how students learn and how to motivate their learning. They must value the diversity of students' experiences and learning styles and have a repertoire of teaching strategies to match their students' needs. They also need to acquire skills in the use of cooperative learning techniques, be able to create teaching resources and implement new technologies in the classroom, apply assessment frameworks and systems, and develop the ability to work and reflect collectively on practice alongside

other teachers.

Teaching practicums as a learning opportunity for future teachers

We propose that teaching practicums contribute to teachers' development. It is in response to personal reflection and external critique of their teaching practice that teachers-in-training begin to implement practices that support their students' learning (Ministerio de Educación Nacional, 2015, 2016). We understand practicums as a space where teachers-in-training learn to teach and engage in research about their teaching practice, begin to analyse the teaching models of colleagues, learn about the daily life of the school, and strengthen their political and social commitment to education.

The measures used to diagnose the quality of education have been accompanied by measures that inquire into the nature of teacher competencies. These inform what should be taught to teachers-in-training, so they develop into good teachers. From the perspective of Escudero et al. (2017), the questions 'why' and 'how' to teach teachers-in-training are relevant because they inquire into the basic knowledge and practices which inform the construction of teachers' identities and their pedagogical know how. Although no consensus has been reached to resolve those questions, studies such as those by García (2012); Imbernón (1994) and Villar (1995) have highlighted that teacher training must have: a component that guides teachers-in-training to recognise and respond to the `diversity and interests of students, a balance between the content and the teaching of the content, a component of psycho-pedagogical learning, a depth of disciplinary knowledge, and a focus on classroom innovation.

Too often, university methods course privilege theory and expect teachers-in-training to make the link between theoretical concepts and what they mean for classroom practice. Recognising this, Hodges et al. (2017) emphasise the value of incorporating teaching practice into academic teacher-training programs because of the learning opportunities that practice offers teachers-in-training. They highlight the power of innovative methods courses that integrate field experiences, as these offer intentional and systematic opportunities for teachers-in-training to theorise from practice when they return to the university.

Likewise, practicums provide teachers-in-training with a valuable opportunity to implement what is learned in the teacher training process, making the link between the abstract and the concrete increasingly visible. This visibility encourages teachers-in-training to become reflective practitioners (Takimoto & Kukar, 2017). In the same way, preparing teachers-in-training for the increasing diversity of students attending public schools represents a challenge for both education institutions and professional development providers as well as for mainstream educators. Teacher training institutions must now prepare their teachers-in-training with skills and techniques that result in rigorous and effective learning, as well as draw on the knowledge and perceptions that those teachers-in-training have built during their experiences during teaching-practicums (Husbye et al., 2017). In addition, Husbye et al. (2017) have shown that the construction of the identity of teachers-in-training who are engaged in practice-based training includes the collection of pedagogical tools, and that this contributes strength to their classroom practice. These findings invite comparison with the ways in which in-service teachers who engage in professional development re-

conceptualise themselves as they make sense of their own professional learning experiences.

The practicum program at the Universidad de los Andes, Colombia

In the Faculty of Education of the Universidad de los Andes, the practicum is conceptualised as the location where academic training and preparation for the world of work intersect. The teachers-in-training engage in interactions that enrich them personally while they simultaneously acquire an understanding of the dynamics and context of the classroom and build knowledge and skills of the profession. They also have the opportunity to share knowledge, doubts and difficulties with their mentor teacher, a practicing teacher who receives the teacher-in-training into their classroom, who is observed by the teacher-in-training and assesses their practice.

Teacher training programs in Colombia have been subject to reforms issued by the Ministry of National Education, which regulates the pedagogical practices that teachers-in-training must engage in during teaching practicums in primary and secondary schools. At Universidad de los Andes, the minimum requirement of 40 credits of teaching-practicums is achieved through a two-phase, five semester practicum program that begins in Semester 4 (second year) and ends in Semester 8 (fourth year) of the teaching degree. The first phase is the formative practicum, which involves three hours per week in a school setting for three semesters, with activities assigned and guided by a mentor teacher. The second phase is the professional practicum, with teachers-in-training attending a school for 20 hours a week for two semesters. In the second phase, time spent in the classroom increases and the teacher-in-training is assigned more responsibility and autonomy by their mentor teacher to undertake activities in the classroom. Increasingly the teachers-in-training engage in class planning activities, teach their own classes, and participate with other teachers in curriculum review activities. They also create teaching material, and design and apply assessment instruments. They may also participate in religious, sports and cultural activities in which parents, teachers and students interact.

Additional requirements set by the Ministry of National Education include the appointment of a practicum supervisor, and the obligation for universities to enter into formal agreements with schools where teachers-in-training engage in practicums. At Universidad de los Andes, the practicum supervisor is a professor from the university who observes each teacher-in-training for 2 hours a week during the formative and professional practicums. The learning and knowledge construction that takes place during the practicum is monitored continuously by the supervisor against course learning outcomes in four ways: through review and feedback of field diaries; through review of lesson plans; through meetings with mentor teachers; and through observation and feedback of the classes taught by teachers-in-training. Communication between the university practicum supervisors and the mentor teachers is carried out in two ways, through email and through mentoring workshops which are conducted each semester. These provide the opportunity for dialogue about the strengths of the teacher-in-training and opportunities for them to improve their practice.

The practicum program places strong emphasis on the teacher-in-training's reflections on the challenges they face in their teaching practice, and on those faced by

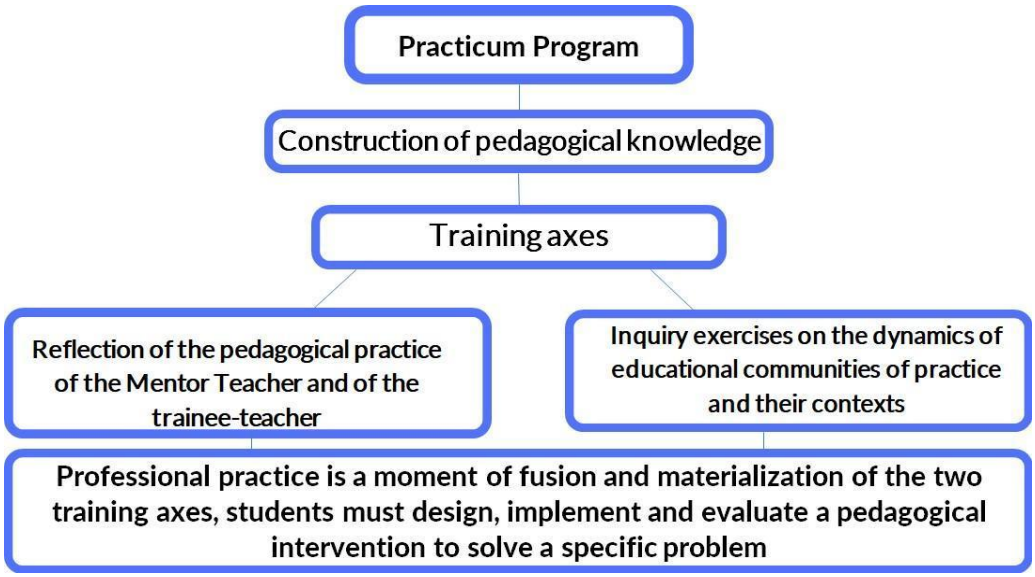
their mentor teacher. During the practicum teachers-in-training rigorously record and analyse their own teaching practices and those of their mentor teachers in the light of pedagogical theories and knowledge they are developing in their field diaries. The teachers-in-training receive continuous feedback on these from during the weekly practicum supervision sessions. The teachers-in-training also complete a self-evaluation document in which they note their communication and teaching practices. These reflections contain the essence of the knowledge, skills, and attitudes that the teachers-in-training continue to build in each of the theoretical and practical components of their teacher training.

At the start of the practicum program, the objectives of the practicum program are discussed with the teachers-in-training, and expectations are conveyed about the competencies that they are to achieve. A detailed description is provided of the weekly supervision activities and the products the teachers-in-training must deliver to provide evidence that they have achieved the course outcomes. The learning outcomes encapsulate the theoretical, epistemological, methodological, and political skills and knowledge that are fundamental for teachers-in-training to achieve during the course.

During the professional practicum, the teachers-in-training research, design and execute a pedagogical proposal to solve a teaching and learning problem in the specific educational context in which they are working. This major exercise is an opportunity for teachers-in-training to demonstrate they can merge the components of theory and practice (See Figure 1).

Figure 1

Components of the Professional Practicum



Method

This qualitative study investigated the processes embedded in the practicum program at Universidad de los Andes that built the pedagogical knowledge and research skills of teachers in training. The study prioritised the perspectives of teachers-in-training as well as mentor teachers and practicum supervisors who provided other sources of documentary and testimonial information. Documentary evidence of student learning was gained from review of the field diaries, planning and teaching resources, and evaluation surveys completed by the teachers-in-training. Class observation and reflections on practice shared with mentor teachers and practicum supervisors were also sources of data.

A content analysis approach was used to review documentary sources. This approach was chosen because, as López (2002) states, "the interest of content analysis does not reside only in the description of the contents, but in what they could teach us, once treated, about 'other things'" (p. 175). As recommended by López (2002), after a comprehensive reading of the documents, the content analysis contemplated descriptions, interpretations, and reflections on the documents. This process led to new ideas about the contents of the texts, which included images, sounds and movies, among other sources. The variables analysed included the skills that students are expected to develop in the practicum program, as shown by the learning outcomes in Figure 2. Those skills reflect the requirements of the Ministry of Education with regard to teacher training, the learning outcomes defined by the Universidad de los Andes, and the skills and knowledge that future teachers should develop as identified in the literature review.

Participants

This study was conducted with 21 undergraduate students (the teachers-in-training) from two cohorts. The first 11 teachers-in-training entered the teacher education program during the first year of its creation, in 2017. The second group of 10 teachers-in-training entered in 2019.

The two groups of students were selected to establish, first, the extent of achievement of learning against course learning outcomes from the practicum program, and second, if there were differences in terms of appropriation of learning between the two groups. The authors were interested in knowing if student outcomes reflected the evolution of the program between its inception and its development after 4 semesters of implementation.

Data Collection

The data collection instruments were documents that were generated from the teaching practicums. A total of 126 documents were reviewed. These included: field diaries (35), observation files of the classes conducted by the teachers-in-training (44), evaluation files of the practicums (18), and pedagogical reflections carried out by the teachers-in-training (29). These documents were generated by teachers-in-training, by

mentor teachers, and by the practicum supervisor. The instruments were used to collect evidence of achievement of course learning outcomes. The data collection instruments and the learning outcomes they were intended to collect evidence about are shown in Table 1.

Table 1

Benchmarks of progress

	Learning Outcomes	Data collection instruments	Type of activity
1	Adapt practice according to the needs and contexts of students	Class assessment format and class observation	Pedagogical interventions of the teacher-in-training
2	Build environments that enhance students' learning	Class assessment format and class observation	Pedagogical interventions of the teacher-in-training
3	Fulfill professional responsibilities and contribute positively to institutional life	Mentor follow-up and practice evaluation survey	Pedagogical interventions of the teacher-in-training
4	Demonstrate mastery of the discipline and disciplinary teaching practices	Class assessment format and class observation	Pedagogical interventions of the Mentor Teacher and the teacher-in-training
5	Set expectations that inspire and challenge students	Class assessment format and class observation	Pedagogical interventions of the teacher-in-training
6	Implement strategies that promote a good emotional classroom environment	Class assessment format and class observation	Pedagogical interventions of the teacher-in-training
7	Plan and structure relevant classes	Class assessment format and class observation	Pedagogical interventions of the teacher-in-training
8	Promote student progression, conduct assessment and provide feedback	Class assessment format and class observation	Pedagogical interventions of the teacher-in-training
9	Foster environments that are participatory, collaborative and encourage critique	Class assessment format and class observation	Pedagogical interventions of the teacher-in-training
10	Describe and analyse teaching challenges by the mentor teacher and oneself	Observation journal	Pedagogical interventions of the Mentor Teacher and the teacher-in-training
11	Reflect on one's own teaching practice	Reflection format of academic practice	Pedagogical interventions of the teacher-in-training
12	Use pedagogic tools and strategies that focus the attention and interest of students	Class assessment format and class observation	Pedagogical interventions of the teacher-in-training
13	Use information gathering instruments to analyse teaching and classroom management strategies in elementary and middle education	Observation journal	Pedagogical interventions of the Mentor Teacher and the teacher-in-training

In addition, data was also collected through two focus groups, which each lasted 2 hours. The focus groups commenced with an online survey (created in Survio online survey software) to generate ideas for discussion and debate. In the survey the teachers-in-training were asked to order the course learning outcomes and associated skills (shown in Table 1) according to their level of importance and difficulty. After the survey, the results were presented and a discussion was generated based on two questions: Why do you think it has been difficult to develop these skills? Why do you think these skills are important?

Data Analysis

Analysis of the documents was supported by use of NVIVO Software version 12, which was used to systematise the data in line with the learning outcomes (see Table 1) to be achieved during the practicums. The 126 documents were collected and each document that evidenced the existence of any of the 13 learning outcomes and key skills targeted in the practicum program was coded and classified into one or more of the 13 nodes (or codes) corresponding to those learning outcomes or skills. The analysis involved two cycles of coding, using the methodology proposed by Saldaña (2009). In the first cycle, descriptive coding was used to compare elements in the documents collected from the two cohorts of students. In the second cycle, theoretical coding was carried out to analyse the classifications given in the first cycle and to compare the skills developed by the two cohorts.

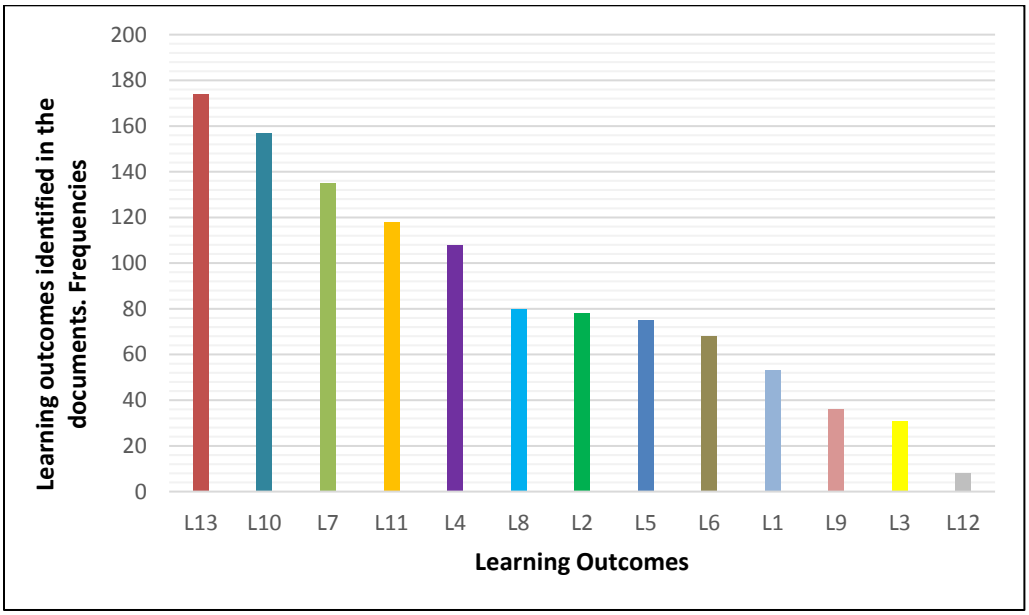
The review and content analysis of the documents was complemented by focus groups in which teachers-in-training were able to discuss and rank the skills and benchmarks of progress that they considered most important and those that they had most difficulty in achieving. Once the discussions generated in the two focus groups were transcribed, they were also encoded in Nvivo using two nodes, one on the importance of the learning outcomes (and related skills) and the other on their usefulness. As in the documents, two coding cycles (Saldaña, 2009) were implemented, a descriptive coding cycle followed by theoretical coding to analyze in more depth the data grouped in each node for both groups of students.

Findings

The incidence of each of the learning outcomes in the documents analysed are shown in Figure 2. Learning outcomes are indicated on the horizontal axis by the number of the learning outcome, preceded by the letter 'L' to indicate it is a learning outcome.

Figure 2

Presence of learning outcomes in the documents analysed.

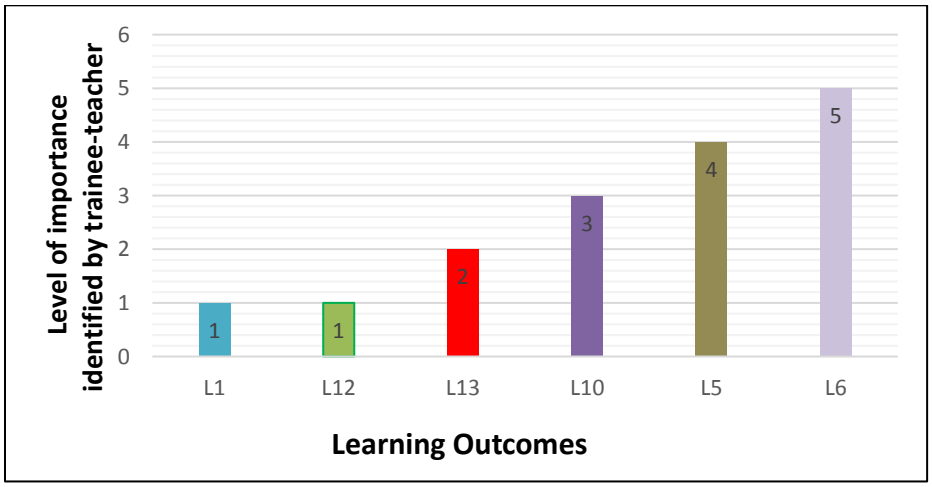


The learning outcomes that were most evident in the documents analysed were coded against learning outcome L13 (analysis of teaching and classroom management strategies), L10 (description of teaching challenges), L7 (Plan structured and relevant classes), L11 (reflect on pedagogical practice), L4 (mastery of teaching in the discipline), and L8 (promotes student learning, assessment, and feedback). The skill that was least evident was L12 (uses pedagogical tools and strategies that focus the attention and interest of students). These findings were used to generate discussion in the focus groups about the learning outcomes and skills that seemed most important to the teachers-in-training and those that were most difficult to achieve.

The learning outcomes that the teachers-in-training identified as most important are shown in Figure 3. In order of frequency, these are: learning outcome L6 (implements strategies that promote a good emotional atmosphere in the classroom); L5 (set expectations that inspire and challenge students); L10 (description of teaching challenges); L13 (use information gathering instruments to analyse teaching strategies and classroom management); L1 (adapts pedagogical practice to the context and needs and strengths of all students); and L12 (uses pedagogical tools and strategies that focus the attention and interest of students).

Figure 3

Most important learning outcomes for teachers-in-training



In the focus groups the teachers-in-training unpacked the reasons why they ranked some learning outcomes, skills, and attributes as more important than others. Examples of student explanations, aligned to learning outcomes, are shown in Table 2.

Table 2

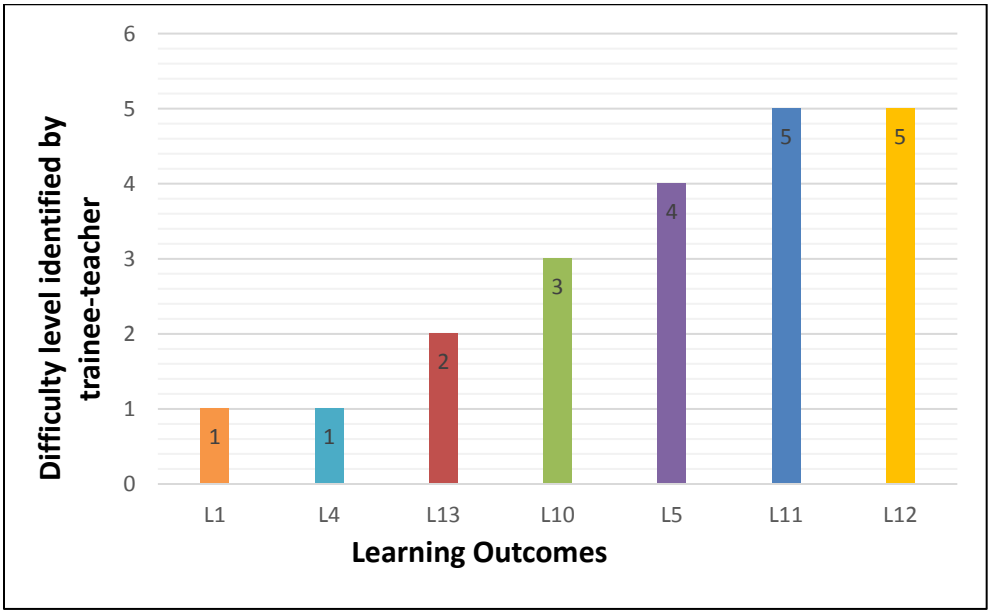
Why these learning outcomes are important: excerpts from focus group discussion

Learning Outcome	Why do you think these learning outcomes are important?
L6: Relationships	Developing classroom emotional management skills is very important, because it is necessary that both the teacher and the students can relate well in classes and other school dynamics
L1: Individual differentiation	The most important thing is to adapt your pedagogical practice to the contexts and needs of the students and their families
L7: Planning	Planning is important, a good teacher must plan the teaching well
L5: Classroom management	Classroom management tools are very important because they have helped us to lose the fear of public speaking and to react well to the anger of children or when teenagers are very defiant.
L7: Relevance	I think it is important that education is relevant, the students I talk to in practice are very critical of the classes and the activities that fail to connect with their realities and their problems, they consider them useless and unnecessary.
L12: Motivation	The issue is planning that motivates students to learn. The important point of planning and design is to get students to learn and get involved in classes.
L4: Disciplinary knowledge	What I see as important is to be able to articulate disciplinary knowledge, to make well-structured class planning from a reading of the students' context
L11: Reflection	We must bear in mind that pedagogical reflection allows us to think and resignify what we do in the classroom.

In the focus groups, the teacher-in-training also ranked the learning outcomes they felt were most difficult to achieve (shown in Figure 4).

Figure 4

Most difficult learning outcomes for teachers-in-training



The seven most difficult learning outcomes were ranked, from the most difficult: L11 (reflect on your pedagogical practice); L12 (uses pedagogical tools and strategies that focus the attention and interest of students); L5 (set expectations that inspire and challenge students); L10 (describe teaching challenges); L13 (use information gathering instruments to analyse teaching strategies and classroom management); L1 (adapts pedagogical practice to the context and needs and strengths of all students); and L4 (demonstrates mastery of the discipline and its didactics, presents the contents of their area clearly and uses different examples to illustrate them).

In the focus group discussions, the teachers-in-training also ordered the learning outcomes according to their difficulty. Some excerpts from the focus group discussion are shown in Table 3.

Table 3

Why these learning outcomes are difficult to develop: excerpts from focus group discussion

Learning Outcome	Why do you think it has been difficult to develop those learning outcomes and related skills?
L4: Disciplinary knowledge	We consider that the most difficult is to learn the knowledge of the discipline because it is necessary to copy different approaches and perspectives
L3: Curriculum integration	It is difficult to incorporate into the pedagogical work the curricular documents proposed by the Ministry of Education as they seem to be very complicated and it is not always easy to contextualize them
L7: Relevant activities	I find it difficult to plan a class and think of enough relevant activities to fulfill the purposes of training the students
L4: Disciplinary pedagogy	For me, the most challenging learning has been to be able to integrate pedagogical knowledge with knowledge of the didactics of the discipline to plan and teach the classes well.
L4: Disciplinary knowledge	I think that we in early childhood do need much more disciplinary training, in what has to do with reading and writing strategies and promoting the development of mathematical thinking in children.
L7: Planning	The main difficulty is to prepare a class that has everything necessary for students to learn and is also aligned with what the institution has proposed in its pedagogical approach. I think that appropriating the approach of educational institutions has taken time.

The focus group discussion indicates that the teachers-in-training considered that the main difficulty encountered in the practicum program was the development of skills that allow them to teach well and which inform the learning of their students. They had difficulty in learning the didactic knowledge of their discipline. It emerged in the focus groups that for students it is not enough to have a general knowledge of pedagogy and didactics but they want specific knowledge of how to teach in disciplines such as languages, mathematics, history, chemistry, and arts. Lesson planning also generated difficulties because, in addition to knowing how to structure a class, students need to incorporate the national curricular documents as well as the pedagogical approaches of the schools where they do their practicums.

The teachers-in-training were most concerned about the skills that were directly related to their future work in the classroom. This explains why achieving learning outcomes such as using information collection instruments to analyze teaching strategies and make observation records in which they analytically describe teaching challenges did not appear in the focus group discussion, although they did appear very frequently in the documents analyzed and even in the survey on the most difficult skills. It seems that practitioners consider the skills of recording and analyzing classroom situations to be important, but they have already developed them. Therefore, their interest is focused on learning outcomes that relate to practical classroom skills, and more specifically, on skills to teach their students well.

A discussion in the focus groups on the most useful learning outcomes revealed topics that had not been mentioned in the prior discussion on learning outcomes of importance. For example, implementing strategies that promote a good emotional classroom environment that facilitates learning, and intentional and systematic reflection of their pedagogical practice were regarded as useful. This implies the recognition of the teachers-in-training on the usefulness of constantly reviewing the strategies, materials and theoretical and methodological references that guide their teaching, and also the ways in which their students demonstrate their learning. From the point of view of the teachers-in-training, developing the ability to reflect on practice is useful because it contributes to a permanent improvement in teaching.

The teachers-in-training reflected that it was important and useful to understand how to guide the learning process through lesson planning and strong pedagogical and didactic knowledge and skills of the discipline. It was particularly interesting that the teachers-in-training highlighted that it is not only useful to develop these skills but also to articulate them in order to better guide the teaching and learning processes.

The learning outcomes that the teachers-in-training identified as being both difficult and important were directly related to their future roles as teachers. This indicates that they are keen to acquire the necessary tools to do their job well. This reflection is important because it indicated that the practicum program positions the teachers-in-training to recognise what they have learned well, what they have not yet learned, and the difficulties that this gap can generate in their future work. This reflection is also useful for the practicum program, to identify what aspects of the program are generating difficulties, what actions must be implemented to overcome those difficulties, and finally, what mechanisms need to be established to provide follow-up and monitor the learning of the teachers-in-training.

The findings show that the learning outcome 12 'use pedagogical tools and strategies that focus the attention and interest of its students', is the one that appeared the least in the documents analysed while it ranked second in difficulty level for practitioners. This suggests that greater emphasis is needed in the practicum program on providing teachers-in-training with tools to maintain students' motivation for learning.

In summary, the results of the analysis of the documents and of the focus groups indicate the achievement of learning outcomes related to class observation, perceptions of the teacher's-in-training of the importance of articulating knowledge about the emotional management of the classroom, disciplinary and pedagogical knowledge to promote student learning and the need to provide tools to teachers-in-training to focus the learning of their students in the classroom.

Discussion and Conclusions

The practicum program discussed in this paper links teaching practice with the application of knowledge to a specific teaching and learning situation (Forner, 2000). The program focuses on the development of learning outcomes and skills that the teacher-in-training must develop and internalise to develop quality interactions with their students (Pianta et al., 2008).

The most important learning outcomes to teachers-in-training (figure 3) are the development of educational practices that help them to respond to the needs of students and their contexts, develop strategies to promote a good emotional environment in the classroom and help their students achieve superior academic achievement. Regarding the skills that the teachers-in-training selected as the most difficult (figure 4), these were learning how to reflect on their practice and acquire knowledge and skills to interest and motivate their students, as well as identify ways to make their practices and learning processes explicit. These results are valuable because they indicate that the interests of the practitioners are aligned with the underpinning philosophy of the practicum program. That is, that reflective thinking is important for teachers, and is something that is learned, and can therefore also be taught.

The focus on reflection that teachers-in-training receive in the practicum program exerts a powerful influence on their concept of teaching and learning, which in turn has a flow on effect to their pedagogical practice. Reflection is an essential element in teacher training since it enables the teacher-in-training to question and investigate their practices. Aligned to this is the focus on in-service teacher engagement in professional development to stimulate reflection on and challenge their educational conceptions and practices to meet the learning needs of students in the 21st century (for example, see Brun 2013). During the last twenty years, reflection has become an essential component of professional development (Buzza et al., 2013; Ossa et al., 2015; Harford & MacRuaire, 2008; Jay & Johnson, 2002; Loughran, 2002; Orland-Barak & Yinon, 2007; Ovens & Tinning, 2009; Postholm 2008). Reflection is an individual or collective process that values experiences, beliefs, and different perspectives. The reflective process leads the individual to new clarity and a permanent questioning about their work (Kay & Johnson, 2002). According to Buzza et al. (2013), reflection allows teachers to improve their practice, transform their work and enhance the learning of their students. Reflection also helps to overcome the limitations of the normative and implicit knowledge and assumptions that educational institutions impose on teachers.

The teachers-in-training in this study learnt skills from their mentor teachers who guided them during their practicums. The figure of the mentor is very important in the framework of this practicum program because they offer knowledge and experience that teachers-in-training can learn from. Mentorship "is an educational relationship between a mentor and a learner, who teaches, listens, shares, accompanies, supports and guides the learner on their learning path" (Verdesoto & Chenche, 2018). A mentor who wishes to accompany teachers-in-training effectively must manifest a range of qualities: communication skills, emotional intelligence, prestige in the community, availability and flexibility, personal involvement, and practical competence. In this study, the mentors of teachers-in-training who were developing research skills also had skills themselves in the production of scientific articles and other academic publications.

As mentioned in the final part of the results, the responses of the teachers-in-training indicate that the practicum program presented in this paper is highly valued as it puts them in the classroom and school settings of their future work. Additionally,

practice, the fundamental axis of the program, allows them to identify which skills are the most important for their practice as teachers and which skills they have not yet developed. This part of the practicum program is important for the university. It provides a review of the program and opportunities for improvement, strengthening its pedagogical component, and identification of strategies that help to monitor the learning of teachers-in-training, with special emphasis on those skills identified by them as the most difficult.

The focus groups also revealed that strengthening of the program should focus on these aspects: determining what is learned and how pedagogical skills are learned in practice; monitoring and emphasising learning outcomes and skills considered difficult; and, promoting articulation of skills so that learning from practice has a character of integration and not fragmentation. These actions would be aligned with the recommendations of authors such as González and Gómez (2014) and Bolívar (2019) who have concluded that practicum programs that train teachers should be interested in exploring how pedagogical concepts are learned. Mannathoko (2013) and Endeley and Nalova (2014), also indicate that practice improves the pedagogical knowledge of teachers-in-training and allows them to appropriate specific pedagogical knowledge.

A final aspect that emerged from the results is the need to ask about the meaning and approach of the supervision of the practice. Learning needs that emerged from both the analysis of documents and the focus groups indicate that supervision must go beyond logistical matters and must focus on continuous review and improvement of content, purpose, and theoretical and methodological elements (García & Martínez, 2006). Bolívar (2019) and Sagayo and Chacón (2006) invite us to rethink practicum programs, to change the approaches to professional practice and make practicums the axis of teacher training that are comprehensive and reflective, an object of study and a field of intervention in the complex situation of the school culture. Teacher training is not merely an instrument for teaching methodological perspectives, but fundamentally, teacher training addresses substantive questions about the role of teachers in the political and ethical project of society (Escudero et al., 2017; García, 2012). We propose that the present and future construction of societies depends on the effectiveness of teacher training.

In this paper we reflect on the analysis of documents and reflections of teachers-in-training and what they tell us about the importance, difficulty and usefulness of the learning outcomes of the practicum-program at a Colombian university. The teaching practicum has a central place in exploring substantive questions in society in addition to providing teachers-in-training with the knowledge, skills, and attitudes they need to effectively perform the work of teachers, including engagement in research and reflection about what takes place in the school environment.

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Conflict of interest

The authors declare that they have no conflict of interest. Funders had no role in the design of the study; in the collection, analysis, or interpretation of data; in the writing of the manuscript, or in the decision to publish the results.

Authors' contributions

The authors declare that they have read and accepted the published version of the manuscript. The contributions of the authors to the manuscript are as follows: conceptualization, NP & AR; methodology, NP & AR; software, NP; validation, NP & AR; formal analysis, NP & AR; research, NP; resources, NP; data preservation, NP; writing - preparation of the original draft, NP & AR; writing - proofreading and editing, NP & AR; visualization, NP & AR; supervision, NP.

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