Learning by Teaching: Children’s musical and emotional skills development through a piano teacher role

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Abstract The teaching experience is a communication process that nurtures social intelligence, encourages self-knowledge and improves one’s learning abilities. Teachers experience this on a daily basis – but the same benefits of teaching can also be enjoyed by the students themselves. The object of my research paper is to observe how a child can learn by “Practicing the Role of the Teacher”, an approach to music that applies a different, enriching perspective that is free of conditioning factors normally associated with personal study. Such an experience enables the child to learn to value and share the teaching-learning process with others. This practical unit was carried out with piano students of the Conservatorio Profesional de Música de Zaragoza (Spain) over the entire course of the 2016/17 academic year. The “teaching child” and the “learning child” are roles that can be adopted and interchanged under teacher supervision. Children participated in this activity on a periodical basis. They approached the experimental situation with a high degree of motivation, support and mutual respect. Through the “Practicing the Role of the Teacher” method (PRT), these children improved their emotional communication skills and progressively became more receptive and involved in their own learning. They also became more autonomous and displayed significant progress in applying tools and concrete resources, in acquiring music-specific vocabulary and cognition, and in developing a critical attitude while forming their own well-founded opinions.

Keywords: teacher role, learning by teaching, children teach children, piano education

Introduction
Teaching is an enriching experience that retroactively feeds back into our own teaching and learning capabilities: *hominem, dum docent, discunt*10. When a teacher is involved in the act of transmitting knowledge to others, he/she develops a number of skills, some of which are teaching-specific (resources and methods for handling and transmitting ideas, social skills, etc.), and others which are more related with the subject being taught (how to organize one’s thoughts around the subject matter, how to approach the concepts that are being introduced by adopting unaccustomed viewpoints and assumptions, etc.). This potential that is inherent in this practice is accessible to anyone who decides to undertake a teaching activity.

The words of Pau Casals, “enseñando también se aprende”11, refer to concrete experiences that have been studied by a number of researchers and pedagogues. In the first third of the 20th century, the constructivist theories of Piaget (1932) and Vygotsky (1978) approached the subject of interaction in child learning. The act of peer-to-peer tutoring was researched in

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studies by Ellson (1965), Thelen (1967), Cloward (1967) and Feldman (1973), among others. Teaching between and among children acquired further relevance in the 1970’s in publications by Gartner, Kohler and Riessmann (1971), and Allen (1976). From the 1980’s on, Germany has been applying the “Learning by Teaching” method (Lehren durch Lernen): its promoter, Jean-Pol Martin, remains active within a widespread community of LdL pedagogues in the most diverse teaching fields. Bargh and Schul (1980), Anns (1983), and Benware and Deci (1984) have carried out experiments on students: their results lead them to conclude that those who learned a certain content with the goal of subsequently teaching it obtained better learning results. Many of those studies, and others carried out thereafter, have put these concepts into practice in group situations where one or several pupils prepare and present specialized content with a varying degree of teacher involvement or support. Many of these characteristics are conditioned by the specific circumstances associated with the style and level of teaching in each case.

Within the area of music teaching, particularly in piano, a number of studies have been carried out on the subject of teaching in groups, an activity that musicians were already pursuing since the early 1800’s: teachers such as Johann Bernhard Logier, Frédéric Kalkbrenner, Franz Liszt, or Clara Schumann taught in groups. More recent teachers, musicians and researchers such as Blyth (1965), Page (1970), Pace (1978), Coats (2003), and Pike (2017) have underscored the efficacy of teaching piano in group situations. Daniel (2008) describes a collaborative pedagogical approach with two students of different proficiency levels:

[...] a level two student is guided in assisting a level one student who is studying the same work as that studied in the previous year by the level two students. [...] In this process, the level one student is exposed to both the teacher and a peer as teacher, while the level two student is placed in a responsible position requiring active oral and aural participation.12

Fisher (2010) comments on the possibility that the teacher may encourage a student to adopt the role of teacher in a two-student class situation:

An excellent format for teachers to first experience group teaching, the partner or dyad lesson involves two students who are instructed simultaneously. [...] Teachers who successfully use this format encourage students to assume the role of teacher by providing comments and feedback for their partners.13

A child’s adoption of the teacher role in a discipline as unique as music differs in certain ways from applications of “learning by teaching” in other fields. As the experience herein described shows, the characteristics of artistic studies and, specifically, of learning to play a musical instrument, include a series of specialized processes that hold a great deal of additional potential yet to be explored.

1. “Practicing the Role of the Teacher” (PRT)

The concept of “Practicing the Role of the Teacher” finds its main justification in the mental, social and psychological benefits which a teacher usually reaps from the very act of teaching itself, and which can be enjoyed by most individuals whenever they merely attempt to exert a teaching activity. The teachers should possess a number of “doing capacities” that they continually develop in the course of their teaching activity:


- Attentively and consciously listening to the student and observing them: analyzing what they do, as well as how and why they do it
- Being capable of verbal expression and effective communication using a specific language
- Employing a great variety of tools and resources to solve problems and find practical solutions
- Reacting promptly and adapting oneself to unforeseen difficulties and new challenges
- Transmitting knowledge and values
- Empathizing: entering in dialogue and in a qualitative relationship with the pupil
- Knowing how to stimulate, cultivate and exude a positive, constructive, collaborative attitude while maintaining one’s critical capacities alert
- Encouraging the student to become an independent, autonomous learner

Apart from those capacities, the motivation that emerges from one’s awareness of the responsibility of teaching, the gain in self-confidence, and the satisfaction of helping and leading others can all exert a substantially positive effect on one’s own self-esteem. The mechanisms at a teachers’ disposal are quite varied, and the teachers never stop learning in the course of their profession. Such an experience is also within the reach of the pupils, who can play the teacher’s role in turn.

PRT can serve as a stimulus to encourage the students to gain a better grasp of the subject and to learn it in a way that is definitely more efficient and practical. It also encourages the development of emotional and social aspects in the pupils’ interaction with their peers. The potential of this experience is thoroughly significant, and its result will be conditioned by the context in which it takes place and the human factor involved.14

1.1. Piano teaching as a context for applying PRT
Learning a musical instrument is a complex procedure that involves several kinds of intelligence and takes place in the course of our entire lives, as we acquire and internalize new tools, knowledge, and experiences. At the age when the children begin their musical studies, they undergo rapid emotional and mental progress: this, in turn, implies that the teaching environment needs to be flexible and constantly adapted. This is the ideal moment to stimulate the development of the children’s skills, emotional sensitivity, and capacity for abstraction. Music is a language with which they make contact and with which they familiarize themselves before embarking on specialized academic studies. The children intuitively recognize the elements of that musical language, but need to acquire the means to understand and “speak” it. By learning to read and understand music, the children can start to appreciate its aesthetic value, thereby acquiring the capacity to give an expressively meaningful performance while perfecting their piano technique at the same time.

The goal of the PRT experience is to improve piano students’ assimilation capabilities and to extend their knowledge and skills. In PRT, the pupil teaches a fellow-pupil who has reached a comparable level, guided by the teacher and applying everything that has been worked on and learned until then. This activity has a positive effect on the pupil-teachers’ attitude and encourages them to develop the necessary predisposition when faced with the responsibility of adopting the role of teacher – an experience that requires knowing how to listen, knowing how to argue, and presenting a subject matter in a reasonable fashion. In so doing, the pupils improve their capacity for expression, become aware of their personal progress, and

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14 In my view, PRT is particularly effective in classes with few students. Of course, pedagogical teamwork has great potential in different contexts, but the setup I present in this paper consisted in a class with one teacher and two students – three, in some cases (two student-teachers and one student-pupil).
enhance and evaluate their knowledge while acquiring and developing a number of skills that complement and exponentially improve their progress. The children raise doubts and occasionally call certain aspects of their own practice into question. The act of verbalizing those thoughts, sharing them with the group, relating them with the knowledge acquired by oneself and by others, and applying the necessary mechanisms with the purpose of tackling a challenge or reaching a goal, all lead to more solidly grounded learning and, first and foremost, to knowledge that has the “feel” of being truly one’s own. Such internalization and assimilation also encourages an important task: memorization. A complementary but no less significant and valuable advantage can be found in the fact that this process also holds benefits for the pupil-learner in the PRT situation as well as for the teacher him/herself. PRT is a pedagogical catalyzer for all who are present in the classroom.

1.2. Piano and PRT in a music school environment

One of the characteristics of piano teaching\cite{15} is that it tends to be imparted in the context of a one-on-one teaching environment. Giving a lesson to only one pupil at a time allows the teacher to work from a number of angles on technical aspects of piano practice, knowledge of repertoire, and the development of musical and personal skills. Although the content of PRT is determined by what has been previously taught in the individual lessons, it tends to be imparted in the framework of Group Lessons with 2-4 pupils\cite{16}. Pupils who take part in these classes are close to one another in terms of age, and have a similar degree of training: this all improves the way the activity functions.

The general goals of elementary and professional music teaching as stipulated in the Spanish Laws of Education (LOE)\cite{17}, include a series of fundamental aspects that are extended and multiplied in PRT sessions:

- Educating students to be tolerant and to refrain from discriminating against others
- Instilling respect for the work of teachers and fellow pupils, thereby promoting dialogue
- Fomenting peaceful human coexistence and interaction in a teamwork setting
- Developing the pupils’ motor and coordination skills
- Kindling the pupils’ musical taste and sensitivity
- Promoting the pupils’ knowledge and grasp of repertoire
- Instilling correct, intelligent study habits

PRT can serve as a point of encounter to help us reach the specific goals stipulated by Spanish law for music education:

- Appreciating the importance of music as an artistic language and means of expression
- Inculcating an aesthetic outlook that helps the pupils establish and develop their own criteria of interpretation

\cite{15} The characteristics of piano teaching, as I present them in this article, are viewed in the context of pedagogy following the guidelines of the non-obligatory teaching (Régimen Especial) imparted by Conservatorios de Música (music schools) in Spain. The levels are:
- Elementary: 4 years, open to pupils from age 7 on
- Professional: 6 years, open to pupils from age 11 on
- Superior: 4 years, open to pupils from age 17 on

\cite{16} Group lessons (clases colectivas) and solfege (lenguaje musical) complement the instrumental training of pupils enrolled in Spanish music schools. Just as for individual piano lessons, the time allotted to group lessons is one hour weekly.

\cite{17} Ley Orgánica de Educación 2/2006, 3 May 2006, Real Decreto 1577/2006, 22 December 2006, “in which the basic aspects of the curriculum of professional music teaching regulated by the Ley Orgánica 2/2006 are established”. For the region of Aragón: Orden de 3 de mayo de 2007, del Departamento de Educación, Cultura y Deporte, “which establishes the curriculum of elementary music teaching as regulated by the Ley Orgánica 2/2006 to be imparted in the Autonomous Community of Aragon”.

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- Helping the pupils learn to express themselves with artistic sensitivity in order to interpret and enjoy music, thereby enriching their potential for communication and personal fulfilment
- Helping the pupils learn to analyse and value the quality of music
- Learning to perform in public with self-assurance, in order to grasp the communicative function of musical interpretation while learning to transmit a true joy of music-making
- Being conscious of the importance of individual study, acquiring the techniques that will enable the pupil to work autonomously and learn to value artistic endeavour
- Getting to know and employ precisely the specific vocabulary of music
- Learning to value silence as an indispensable element for concentration, musical thinking, and the “inner ear”

2. Applying PRT in a piano class environment

It is recommendable to implement PRT with children who have completed at least one full year of piano and therefore possess a minimum of basic training. In each class it is advisable to include two sub-sessions (one per pupil) to ensure that the children are allowed to exchange roles and enjoy the benefits from playing the roles of teacher and pupil respectively. Each session is divided into four phases that trace a curve of constant progress – a widening spiral of contributions and achievements:
1) Exposition: the teacher explains how the session will take place
2) Performance: the learner-pupil plays the piece
3) Collaboration: three-way communication between the teacher-pupil, the learner-pupil and the teacher
4) Resolution: evaluation, conclusions, and application of results

In the Exposition portion, the teacher explains and guides the pupils regarding the activity they are about to engage in. This is where the first adaptation to the pupils’ learning level and personal traits takes place. The asymmetrical relationship that is established between the pupils who adopt the roles of teacher and pupil respectively requires a constructive, empathetic, empowering approach that is clearly explained at the beginning of the session. PRT stimulates and boosts the pupil-teachers’ self-confidence: they note that their responsibility as teachers implies that they should be able to manage and control eventual difficulties. These children are going to hear a piece they know, on which they are currently working, and regarding which they are in a learning process. The parameters that need to be addressed are not all equally weighted. Therefore, it is useful to establish one’s attitude toward them and to proceed step by step, starting with those that are most accessible and easy to explain18:
- Rhythm / figures / tempo
- Notes / alterations
- Dynamics and agogics
- Articulation
- Pedal
- Fingering
- Posture at the piano / gestures / finger positions
- Expression / communication
- Character / style
- Balance / phrasing
- Structure / memory

Thus, the teaching-pupil can start by observing his/her colleague’s posture and gestures, paying attention to rhythmic aspects, figurations, and tempo in the execution, etc. The quantity of parameters that need to be observed simultaneously, their complexity, and their interrelationships are regulated by the teacher in view of the two pupils’ degree of training.

18 The relation presented here is merely a suggestion. It has no pretension of being hierarchical or exhaustive.
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and their familiarity with the piece.

Once the procedure has been presented and explained to both pupils, they act in the same way they would in an individual lesson: the learning-child sits down at the piano and performs the repertoire piece (or fragment thereof) chosen by the teacher. During this new phase, called **Performance**, the teaching-child observes and listens in order to perceive and recognize the positive aspects, and point out those elements in the colleague’s interpretation that can be improved. This stage demands that all three people present in the classroom implicate themselves fully in the activity and pay close attention.

The **Collaboration** phase is based on the learning-child’s performance that has just taken place. As previously agreed upon, the teaching-child expresses his/her viewpoint and appreciations, taking the initiative and freely according to his/her perception and criteria. The child should verbalize the ideas by using vocabulary that is as specific as possible. The development of language is decisive for the development of the children’s thought, and affects how they use what they already know but do not yet know how to apply. The indications the teaching-child will provide should be reasonable, and can be reflected upon and discussed by the learning-child. The entire procedure is also reviewed and supervised by the teacher, thereby establishing three-way communication in order to reach clear, concrete conclusions. Regarding this aspect, it is important that the teaching-child proposes methods and tools that can be truly constructive or help correct certain mistakes in terms of sight-reading, practical realization or musical understanding. Most of those methods and tools will have been learned; some may be original and spontaneously invented.

In the **Resolution** phase, those contributions on the part of the teaching-child which have been approved and developed in tandem with the learning-child and the teacher are now concretely applied in class. The results are treated with the same valuation and respect as in individual lessons, but in this case the teaching-child is able to truly appreciate them as stemming from him/herself, as the fruit of his/her own reflection and initiative. Once the technical solutions and the corrections have been applied, the process is re-initiated: a new fragment is chosen, as well as parameters to be observed. When the teacher considers it appropriate, the session is concluded and another one begins. In the second session, the pupils exchange roles and a new PRT dynamic is set in motion. The fragment or piece can be identical with the one just treated, or not, and it is the teacher’s task to judge its convenience according to the situation.

2.1. A practical case in the classroom
The PRT sessions described in this article were carried out at the music school **Conservatorio Profesional de Música de Zaragoza** (Spain), with students in 3rd and 4th years of elementary piano training and 1st year of secondary (“professional”) piano training, divided into five groups. Their ages ranged from 10 to 14, and the classroom time devoted to the activity was of one weekly hour throughout the 2016-2017 school year. We always carried out this activity with pairs of students, except for a lesson featuring three children, for which we accordingly adapted the procedure\(^{19}\).

The point of departure for these sessions was the manner in which these pupils were distributed among my group classes. Taking their similarity in terms of age, level and year of

\(^{19}\) In the specific 3-pupil case, we carried out three sessions instead of two, and in each one of them the teacher role was shared by two pupils in teamwork.
study into account, I assigned two works of commonly shared repertoire to the members of each group:

- Jaime, 10 years old; Susana, 11 years old; Belén, 12 years old. 3rd elementary piano year: Bach, J. S.: Little Prelude BWV 926 / Clementi, M.: Sonatina op. 36 no. 2
- Mara, 10 years old; Mario, 13 years old. 3rd and 4th elementary piano year: Czerny, C.: Study op. 299 no. 1 / Chopin, F.: Vals posth. in a
- Ángela, 11 years old; Óscar, 12 years old. 3rd and 4th elementary piano year: Beethoven, L.: Sonatina Anh. 5 no.1 / Schumann, R.: Album for the young op. 68 no. 12
- Álvaro, 12 years old; Miguel, 12 years old. 1st secondary year: Bach, J. S.: Invention BWV 784 / Beethoven, L. van: Sonata op. 49 no. 2
- Alicia, 14 years old; José Carlos, 14 years old. 1st secondary year: Beethoven, L. van: Rondo op. 51 no. 1 / Bartók, B.: Romanian Folk Dances Sz. 56 no. 1

This commonly shared repertoire was featured in the PRT sessions throughout the school year. During the first weeks we worked on the pieces in the individual lessons, making progress in sight-reading and grasp of the score, interpretation at the piano and acquisition of technical resources and approaches. One month afterwards we started applying PRT in the group sessions.

In the Exposition phase, I suggested to the students that we could “enjoy the opportunity of carrying out a new, interesting and original activity: you can give the piano lessons”. Faced with this challenge, their reaction was often of surprise, disbelief and even mistrust; in some cases, out of insecurity or timidity, they expressed doubts. Regarding such misgivings, I clearly explained that the pupils could freely propose all ideas that might occur to them as long as their comments remained within the boundaries of mutual respect. It is exciting to let a child sit in the teacher’s chair and encourage him/her to observe his/her fellow pupil – a stimulating experience for the teacher as well as for the pupil. The students’ attitude became positive; nevertheless, the kind of challenge they were facing was new to them. We jointly decided which parameters they could observe according to their degree of training and knowledge of the piece (which, as previously mentioned, we had already studied in individual lessons). On the occasion of the first experimental session, we set ourselves the goal of ensuring that the piece had been correctly sight-read. With practice, the pupils started to gain confidence, and we were able to monitor a larger number of musical elements in each session.

In the Performance phase, the students’ motivation palpably increased from session to session. There was motivation on the part of the teaching-pupil to consciously listen and observe, and on the part of the learning-pupil, to attempt to interpret the piece as correctly as possible. The fragments performed in the first sessions were brief, and selected in order to be within the child’s grasp: just a phrase or a small section. During the performance, the teaching-pupil proved to be more attentive and committed than in individual lessons or in personal study, although the degree of overall excitement and implied responsibility did indeed initially inhibit certain pupils. More complex aspects, such as the task of analysing, relating concepts with one another and applying one’s own knowledge to the task, improved notably on a mid-term range thanks to practice and habit, progressive familiarization with the piece, dialogue among pupils and guidance on the part of the teacher. The fact of having the opportunity to put some distance between themselves and the piano without preconceptions or worrying about playing enabled the pupils to widen their degree of perception, capacity for observation and conscious, attentive listening. This alternative way of actively approaching piano-playing – the internalization of music – was the key element that enabled the children
to modify their study routine and their relation with the instrument.

In the Collaboration phase, pupils often tended to use simple expressions such as “this”, “here” (pointing with the finger), “more this way”: vague words and phrases without a concrete indication in the score, without explaining the problem or solving the error. The children grasped the language concepts they needed, but had never previously incorporated them into their approach to music. As weeks went by, the children displayed excellent progress in this aspect. Their capacity to manage concepts they had learned, to express themselves and communicate in a musical context all notably improved. They started to use terms such as “stave”, “figure”, “motif” or “articulation” on a more habitual basis; they began to describe ideas, procedures and opinions with more appropriate terms. One example was Belén’s first comment: “Those notes there are more this way” (pointing and gesticulating in the air). After several weeks of work in the classroom she expressed herself more adequately: “In the first stave, in the second measure, the four initial eighth-notes in the right hand are not all legato, but are articulated two by two; you need to separate them and slightly accentuate the first one”. In this case, asking the pupils questions such as “Is the melody in the right hand not audible because it is too soft or because the left hand is playing too loud?” “So, did she play that motif staccato or non legato?” proved to be a useful resource that enabled them to define their utterances more concretely. This activity encouraged emotional communication between the pupils and teacher; the child placed him/herself “in the other person’s shoes”, and learned to regard him/herself as part of a group, a collective.

In the Resolution phase, we applied all aspects we had agreed upon in the previous phase. In these sessions the pupils were aware that “doing” something for others is not the same thing as “doing” the same thing for oneself. In the first PRT sessions, several teaching-pupils were able to detect and correct some of their colleagues’ mistakes; however, after several minutes, in the next session and taking up the role of learning-pupils, they committed the same mistakes they had previously pointed out themselves in the same fragment. We thus drew their attention to the difference in their level of perception, to the damage caused by acquiring bad habits, and to the fact that mistakes in aspects they are aware of (and which lie within their grasp) are “involuntary” errors they can indeed avoid. These situations encouraged the children to be just as reflexive in their daily practice as when they adopted the teacher role in PRT.

3. Evaluation and results
From the beginning of the school year, during and after partaking in PRT sessions, these pupils displayed significant advances in the development of a series of musical, emotional, and social abilities. Such skills are not limited to PRT, since they are likewise addressed in individual lessons and in the course of other musical training activities. What was truly revealing was the degree to which the children extended and developed those abilities thanks to a new experience, a fresh perspective.

The most relevant short-term advances became evident in the pupils’ degree of commitment, as well as in their way of interrelating and interacting with one another. Their degree of receptiveness and motivation immediately increased when they realized they could become actively involved in their own learning process. Rapid progress was shown in the areas of perception and listening, as well as in the content quality of the teaching-pupils’ comments after having listened to their colleagues’ performance. This activity’s bidirectional potential
enabled the children to express doubts, discuss certain subjects, and pool their opinions. They thereby felt encouraged to interact with others, deal with conflicts with their peers, and suggest solutions. After a brief period, the results in their personal piano training started improving notably thanks to this activity.

Some of the midterm advances had to do with a more precise use of language and expression. The pupils learned to be more closely attentive to their five senses, they improved their capacity for attention and for associating different elements with one another. Their degree of intellectual curiosity increased; they also started using more elaborate tools and resources, they started learning to plan in advance, to anticipate and reflect more profoundly before merely “moving their fingers on the keyboard”, and thereby learned to evade involuntary, automatic habits, and to avoid playing without having a clear goal in mind. The pupils – particularly those who had been the most timid and insecure – gained in self-assurance and confidence as they observed how their peers confronted and resolved difficulties they all had in common. In the case of the most nervous and hyperactive pupils, the act of having to assume responsibility towards a peer and interchanging roles in the class sessions encouraged their commitment and interaction within the framework of the class dynamic.

In the long term, the pupils gained a greater deal of autonomy, due to the challenge of having tried out the teacher role. Their perception became more acute, and they learned to listen more actively and consciously. Their capacity for analysis increased, which enabled them, in turn, to gradually learn to resolve more complex problems. They acquired a greater degree of self-assurance in their way of expressing themselves; their critical and self-critical capacities increased; they acquired a greater degree of independence, and a capacity to organize their work. This experience, in turn, reinforced personal values such as empathy, receptiveness, cooperation, identification with a group, and the vocation to help and teach others.

Interacting with children while addressing specific classroom subject matter is also of great use to the teacher, since it keeps him/her abreast of the degree to which the pupils grasp and are capable of wielding the tools and resources at their disposal. The teacher can observe their degree of commitment, their self-confidence, and their trust in their own knowledge; he/she perceives how they learn to value their teaching engagement and become much more involved in the teaching-learning process – a collaborative undertaking that benefits the overall classroom atmosphere.

4. Conclusions: possibilities for applying PRT
Teaching, and learning with the purpose of teaching, are factors that extend and encourage our own learning process. The process described in this paper is an experience periodically carried out on pairs of pupils guided by a teacher in group piano lessons that serve as a complement to individual lessons. This activity enables the pupils to reinforce a great number of capacities and skills; these, in turn, not only strengthen and consolidate the children’s learning process, but provide them with new resources and new ways of approaching music. At the same time, they learn to tackle and overcome their own difficulties independently, while they also extend their social and emotional abilities. The children acquire arts and habits, and above all, self-knowledge.

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Incorporating the “Practice of the Role of Teacher” in musical education, and, specifically, in the teaching of musical instruments in music schools, can prove to be a powerful, enriching and empowering resource for all who are involved in the teaching-learning process. The future implementation and follow-up of such experiences over a more extended period of time, as well as the inclusion of pupils from other age groups and instrumental specialties, will enable us to obtain further, enriching, complementary conclusions and insights on the basis of the groundwork here described.

References


