THE PHENOMENON OF ORCHESTRAL PRACTICE: IMPLICATIONS FOR STUDENT MOTIVATION AND LEARNING - TEACHERS' POINT OF VIEW

A. Fonseca

Aveiro University (PORTUGAL)

Abstract

In recent decades, we have witnessed a significant increase in research on music teaching-learning processes. However, we still find few scientific studies related to the development of group musical practices, namely orchestra practice. This exploratory study aims to understand the phenomenon of orchestral music practice, especially to understand how this practice is reflected in students' motivation and practice. To know their perceptions on this topic, we interviewed 15 music teachers who have students attending orchestra classes. A content analysis of the information compiled from the interviews was performed by means of brief descriptive summaries; systematic summaries based on chosen categories; collection of the most relevant information and comparison of data with the literature. As a result, we can say that teachers perceive that playing in orchestra motivates students to learn and practice their instrument even more, increasing the time they dedicate to practice and clearly helping them to develop their musical and social skills. The social nature of this task, which involves bonding with peers, makes it a source of motivation. Furthermore, playing in an orchestra seems to help students' autonomy to grow because of a perceived competence, becoming a challenge in which there is a balance between the complexity of the task to be performed and the perceived competence to perform it successfully.

Keywords: Orchestra, motivation, instrumental learning, skills, practice.

1   INTRODUCTION

In Portugal, the group musical practice is part of the *curriculum* of specialized music schools, according to the legislation [1, 2] For this reason, in such schools there are orchestra classes where students of strings, wind and percussion can learn to make music together. This regular group practice helps students develop musically, socially and humanly, helping students grow "the capacity for cooperation and group work" [3, p. 11].

Although the origin of the term - orchestra - goes back to ancient Greece, the term today refers to the body of musicians [4], and in this article will be used as referring to groups based on string instruments, in the context of student orchestras.

2   CONTEXTUALIZATION

In recent decades, we have witnessed a significant increase in research on music teaching-learning processes. However, we still find few scientific studies related to the development of group musical activities, namely orchestra practice.

In literature, the different motivational factors have been widely studied and discussed [5, 6, 7, 8]. Some theories that try to explain this motivational process and that are most often referred to in the area of musical learning are: the theory of self-efficacy, which Bandura developed [9, 10], and which is based on the concept of self-efficacy – the assessment that the person makes of his abilities [11]; the attribution theory, according to which the value judgments that are given to successes and failures affect self-esteem, self-concept and future expectations, factors that define the performance that is placed in tasks [6, 12]; the expectation-value theory, according to which the individual feels motivated according to the value, interest, utility and cost that it attributes to the task [13]; the self-determination theory, according to which individuals feel motivated if they fill in the 3 basic needs, autonomy, competence and bonding [14, 15].

These theories - mentioned as being related to this study - among others, have been used to explain the development of motivation in the context of musical learning. But looking for a broader point of view, we look for other authors who could help us analyze the general development of young people who learn music. This is the case of Bronfenbrenner's ecological theory of human development [16]. According to this theory, the development of the individual is marked by the different contexts that surround him, from the closest to successively larger contexts. According to it, the development of the person consists in the adaptation of the person to his environment, which includes distinct dimensions - the person, his interaction with the neighboring environment, the person in the social context and in time. Then, the learning process is influenced by the interactions between the different environments or contexts that involve the individual [16, 17].

Following, we start to explain the purpose of this study.

3   STUDY OBJECTIVE

The aim of this study is to understand the phenomenon of musical practice in orchestra, namely, to understand how to play in orchestra is reflected in the motivation of students and in the study of the instrument. Through interviews, we sought to know the perception of the teachers involved.

Next, the methodological procedures done in the study will be explained.

4   METHODOLOGY

Given the limitation of references in the literature on the subject in question, an exploratory study was conducted. This kind of studies is suitable to the aim of this research, namely, to seek to know a phenomenon that has been little studied and, at the same time, generate knowledge that guides future research [18, 19].

A total of 15 semi-structured interviews were conducted with teachers who had had students in orchestra classes from different schools of specialized artistic education in mainland Portugal.

A content analysis of the information compiled from the interviews was made by means of brief descriptive summaries; systematic summaries based on chosen categories; collection of the most relevant information and comparison of data with the literature.

A script of questions was prepared. Next, the script is shown, along with the purpose of each question.

Table 1 - Question script for teacher interviews.

Script interviews with teachers	
Question objective	*Questions*
To know the general profile of the teacher	*Instrument:*
	1. How many years have you been teaching?
	2. Your students cover what age group?
	3. What year are your students in?
	4. Has this been the usual type of work you have been doing in recent years?
	5. Do you play or have you ever played in orchestra in a professional context?
	6. Do you like teaching?
	7. At the moment how many of your students attend the school's orchestra classes?
To know the teacher's understanding of the theme of students' motivation and about the obstacles to it	8. In your opinion, how would you define what you consider to be a motivated student?
	9. Do you think the student's motivation has anything to do with "talent"?
	10. From your point of view, what is the biggest challenge of musical learning (instrumental)?

To know the teacher's perception of the impact of group musical practice on the student	11. How do you assess the importance of students playing in groups, such as in orchestra or in band? (If he think it's important:) do you think it affects their motivation?
To know the teacher's perception of the difference in the impact of different musical group practices on students	12. (If you have students playing in both formations) Do you think there is some kind of difference (in relation to motivation) to playing in band or orchestra?
To Know the teacher's perception of students playing in orchestra outside of school	13. Have you currently or have you had students who played regularly in orchestral context outside of school?
	13.1. Is it a common situation?
	13.2. In your opinion, why?
To understand the teacher's perception of the impact of orchestral practice on the student	14. When students start attending the school orchestra, do they usually talk about the orchestra with you?
	15. Do they ask for help in overcoming any problems with the orchestra parts?
	16. Do you think the experience of playing in orchestra affects students emotionally? (if so, how?)
	17. In your experience as a teacher, do you think that students - when they start playing in orchestra - are affected in the study of their instrument?
	17.1. If so, how?
	17.2. Do you have recent cases that exemplify what you've commented on?
	18. Do you think that, for example, playing in the school orchestra affects the study time or commitment they put into learning?
To know the teacher's perception about students expressing more motivation for individual practice or to play in a group	19. Do you have cases of self-motivated students for playing in orchestra, but not for violin lessons? Or vice versa?

The use of semi-structured interviews is appropriate in an exploratory study, namely in a study involving the analysis of perceptions [20]. On the other hand, the flexibility of this type of interviews allows adjusting the time spent on each question, according to the relevance degree of the information revealed [18]. The questions of the interviews were mostly open answer, which allowed to deepen the views expressed, the obtaining of unexpected, unanticipated answers [18] and the obtaining of "rich" information [21, p. 94].

To circumvent possible threats to the reliability and validity of the results, measures were adopted such as: it was reflected on the influence of the researcher in the research process [20], a record of all research activities was kept throughout the research process [18], techniques were used to build a climate of trust between interviewees and the researcher [20] and "negative cases" were analyzed [20, p.342] – problems involved in the phenomenon studied.

The interviews were all conducted between December 2012 and January 2013. The interviewees authorized the video recording and processing of the data through informed consent. Video recording has the advantage of being a reliable way to gather information, making the interview almost an informal conversation, giving the interviewee greater comfort [20]. Subsequently, all interviews were transcribed to analyze the data they generated.

4.1 Study Participants

The 15 teachers interviewed were chosen according to what the literature calls "intentional sampling" [18, p. 265], that is, the choice of participants is made according to a certain profile defined by the researcher, according to the needs of the research [18, 22]. In this case, for the accomplishment of this study, 4 criteria of choice were defined: teachers would have to (i) teach an orchestral instrument, (ii) have in the present or recent past students attend orchestra classes, (iii) represent the diversity of instruments of the orchestra and (iv) represent different realities related to specialized artistic education (public schools, private-corporate education, and in this second group were included professional music schools and special projects with social inclusion component through musical practice) (see Table 2).

Table 2 - Distribution of teachers by instrument.

Instrument	N
Violin	8
Viola	1
Cello	1
Transverse Flute	1
Bassoon	1
Trombone	1
Harp	1
Percussion	1

As can be seen in Table 2, 11 teachers taught string instruments and the other 4 taught instruments from other families.

Participants in this study had a total of 105 students attending orchestra classes during the school year in which the study took place. Teachers had an average of 9.5 years of pedagogical experience. They taught in 14 cities and towns in mainland Portugal and 8 men, and 7 women were interviewed. It should also be noted that the teachers spoke of their experience as teachers throughout their accumulated course and experience.

4.2 Data analysis

The data collected in this study were subject to qualitative analysis, due to the qualitative nature of the interviews. This type of analysis can be "highly effective", particularly about the relationship between "cost", that is, effort and time, and the result obtained [20, p. 329]. Some data were converted into numerical data to deepen their reading.

The method of analysis performed is called "standard analysis" [23, p. 164; 18, p. 458]. This type of analysis consists of analyzing the data based on their categorization. The objective of the process is the discovery of patterns or regularities regarding the phenomenon under analysis and the reflection on it [18]. This analysis model is a systematic process that included what Robson calls "data reduction methods" [18, p. 477] and which consisted of the following steps: (i) after transcribing each interview, a brief summary was prepared with the most relevant data from each interview, (ii) then a systematic summary was made based on defined categories – chosen according to the questions most directly related to the phenomenon under analysis and (iii) the most relevant information for each category was collected from all summaries.

5 RESULTS

The data collected in this study indicate that teachers have the perception that playing in groups is important for students (N=15, 100%), motivates them to learn music (N=11, 73%) and affects them emotionally (N=12, 80%) (see graph 1).
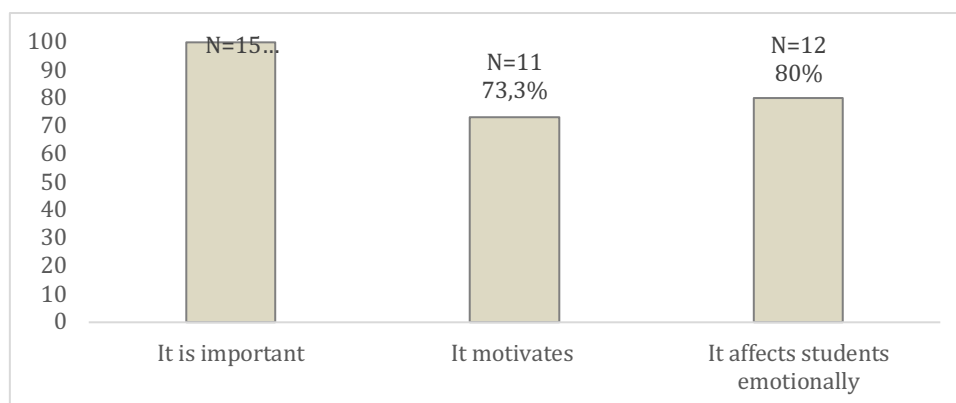
Graph 1- General perceptions of teachers about playing in school orchestra.

These positive perceptions of teachers seem to be related to what students manifest to them (see Table 3).

Table 3 - Positive perceptions expressed by students (comments from teachers).

"And the girl is really very happy"

"He tells me he likes being in the orchestra a lot"

"Hey, teacher, that's cool!... what we're playing, it's fantastic".

"The highest percentage of students like to play together"

"They like it very much"

"I see their happiness at the end [of the orchestral concert]. It's different, they're happier."

"There are students in whom I feel a greater approximation... more contentment of working in orchestra"

"I can see them enjoying a lot more when they're playing in the group"

Table 3 shows positive comments from 8 teachers (53.3%) on orchestral practice.

Most teachers (N=9,60%) reported that had already had students playing in orchestra outside the school, which seems to confirm that many students feel motivated to play in orchestra.

Regarding the motivational impact resulting from playing in orchestra, the data collected in this study seem to indicate that playing in orchestra can reflect to go positively in (i) individual study of the instrument, (ii) in changing learning goals and (iii) in changing the way students see themselves.

It was reported by 14 teachers (93.0%) that students increase their efforts to study the instrument because of playing in orchestra. The increased commitment can be explained by the orchestra giving them a new task with specific difficulties to overcome. On this point, 12 teachers (80.0%) reported that students ask them for help in solving technical difficulties in the orchestra repertoire.

On the other hand, 2 teachers ((13.3%) mentioned that their students increased the degree of commitment to musical learning because of intensive periods of orchestral work (orchestral stages). In addition, 2 teachers (20.0%) reported that students expressed pride in belonging to the school's orchestra.

In the interviews, 13 concrete cases of students were mentioned, and the majority (N=11, 84%) referred to motivational gains resulting from playing in orchestra (see table 4).

Table 4 - Teacher comments on specific students.

"I have the case of a student who even socially is not much given... Now he is a completely changed student. He's already interacting with his colleagues. In violinist terms he evolved immensely. At the beginning he…could barely read notes and now reads music very at ease. But it took mine and his work and interaction with colleagues, even though colleagues pulled him in orchestra... all together [contributed] to a great evolution... of him"

"I have a student who had a lot of [learning] problems, but this year, being a very closed student at the emotional level, he went to the orchestra. [I had taken the initiative to encourage him to go to the orchestra] and he started playing in a large group with older students. The kid started to develop. And I'm very pleased [with the student's reaction] and I see that the student is much more motivated. He tells me he likes to be in the orchestra very much. I think it's helping him grow emotionally and... this is reflected in the study of the instrument"

"I have a student who decided to follow music exactly after an orchestral internship at the end of 9th grade. They had an internship with a conductor ... and she had to work on it. I remember she ended up with blood bubbles on the fingers. But then she said to me, "This is what I want to do!""

"I have a girl who came to me directly to the 5th grade... She was a student who... had some serious technical problems... fortunately... worked hard to improve... and I, as an incentive, I thought it was important for her to join the orchestra... I thought in terms of motivation, it could do her a lot of good. And in fact, she's really excited. The fact that she went to the orchestra was very good for her. It opened a door for her. She had never played in a group, or in public. She had never made music before. It was reflected in the way she has looked at the violin itself, the time she has devoted, the effort she has made"

Table 4 shows 4 examples mentioned by teachers that exemplify the significant impact that orchestral practice may have on students.

According to the data collected, the teachers attribute the motivational gains of the students to social factors, which was reported by 10 interviewees (66.6%) (see Table 5).

"They see colleagues who play [in the orchestra] and really want to join it. Because they like it and they see orchestra performances, they see the work they do, and they also want to participate"
"As he saw colleagues playing (in the orchestra) …he thought he also wanted to be on the other side [playing with them]"
"They want to play in orchestra because they see the older colleagues very happy to play in the orchestra"
"Students see playing in the orchestra not as a must, but as a prize. And they're getting ready for it."

Table 5 shows 4 comments from teachers about the social factors that attract students to orchestral practice.

Another factor that seems to explain the motivational gains of playing in orchestra is what students learn in orchestra, both socially and musically, as can be seen in Tables 6 and 7.

Table 6 - Social skills developed because of playing in orchestra.

Social skills:
Knowing how to be part of the group: "They feel they have other colleagues... that they have to play their part well".
Discipline of working at home for the group's result: "They begin to realize the importance of the orchestra and have to work almost daily for it"
Emotional growth: "Feeling integrated into a group, the large group experience is really emotionally positive for students"
"It is essential for their development as musicians and as persons"
Concentration: Learning to "stay focused longer"
Responsibility: "They... have to play their part well, they feel they have to make a good performance"
"They have to study for both things" (orchestra class and instrument class)

Table 7 - Musical skills developed because of playing in orchestra.

Musical skills:
To listen to the group: "It makes them listen, to think what's going on around them"
Understanding the importance of 'different voices in music': "Being able to perceive musical language among more than one instrument"
Discipline of working for the group's result: "They begin to realize the importance of the orchestra and have to work almost daily for it"
Improved reading ability
Keep Pulse and Tuning: "Some general rules, such as keeping pulsation or paying attention to tuning"
Understanding the role of individual parts in the music: "That the notes we play can make a difference, or be part of the music"
Development of sensitivity: "tend to carry a greater sensitivity that I think they deepen in orchestra, in the individual study of the pieces themselves"
Knowledge of different articulation: "The variety of articulation"
Performance skills/dealing with anxiety: "Stop thinking that playing on stage is a thing like that" too complicated
"At the time of execution, the motivation has to be worked towards the final product"
Working sound of the group: "Work sound issues, try to join, to have a sound more like the others"

The data presented in these 2 tables show examples that illustrate what teachers perceive students learn by playing in orchestra. In total, 12 teachers (80.0%) reported the development of these 2 types of skills.

Still about possible factors that motivate students to orchestral practice, other ideas that were mentioned were: the possibility of learning new things (N=4, 26.6%), the desire to obtain recognition (N=3, 20.0%), feel the emotion of making music (N=3, 20.0%), work and interaction with the orchestra teacher (N=3, 20.0%), the desire to learn from the more advanced colleagues and to imitate them (N=2, 13.3%), the experience of playing in a larger group (N=2, 13.3%), the feeling of the physical sound of the orchestra

(N1, 6.6%) and the higher gratification in the task of making group music (N=1, 6.6%). Note how these different points are related either to social factors or to the musical task itself.

As can be seen in the following Table, the repertoire was also referred by teachers as being a relevant motivational factor.

Table 8 - The repertoire as a motivational factor.

"What we're playing, it's fantastic" – says the students
"If it's a very positive experience, a program... that they liked it a lot".
"Or because they have new pieces..."
"The student was amazed to play such a [wonderful] work that caused him emotions"

In Table 8, the examples mentioned show that the repertoire is a motivating factor for orchestral practice.

On the other hand, the data collected in this study indicate that playing in orchestra can cause problems that may be negatively reflected in motivation of music students (see Table 9).

Table 9 - Problems related to play in orchestra.

I.	Adaptation to a new group
II.	Undeveloped reading competence
III.	Difficulty in understanding what is required of the student
IV.	Autonomy that the task requires
V.	Problems with the orchestra teacher
VI.	Intensive orchestral work
VII.	Inappropriate repertoire
VIII.	Development of problems by playing in orchestra

As can be seen in Table 9, the first 4 problems - adaptation to a new group, undeveloped reading competence, difficulty in understanding what is required of the student and the autonomy that the task requires - seem to be part of the adaptation process when the student joins the orchestra. Note that some of these problems, as is the case of number II, reading problems, are not the result of orchestral practice, but playing in orchestra causes the problem to manifest itself if it exists already.

On the other hand, problems V to VIII - *problems with the orchestra teacher, intensive work in orchestra, inappropriate repertoire* (too easy or too difficult), *development of problems by playing in orchestra* - seem to be specific situations and factors that if not taken care of result in loss of motivation of students.

Regarding *problems with the teacher*, 2 teachers (13.3%) talked about it to discourage students from orchestral practice. In fact, the literature shows that the teacher-conductor plays a fundamental role in the dynamics of the classes of ensemble classes [24; 25].

The repertoire worked in orchestra, already mentioned as a motivating, was also referred to by 6 teachers (40.0%) as a problem, if not properly adjusted to the technical level of the students. This can be a problem if it is too easy, or too difficult.

The last problem, development of problems by playing in orchestra - skills with negative impact or the acquisition of technical problems - was reported by 3 teachers (26.6%). For example, one of the interviewees mentioned that intensive orchestral work can spoil the sound and tuning of students, taking "days to recover". This problem related to intensive orchestral work was reported by teachers with experience in professional music schools.

6   CONCLUSIONS

The qualitative analysis of the data collected in this study seems to indicate that most teachers consider that playing in orchestra is an experience that affects students' emotions, and that it can be positively reflected in the students' learning and motivation to study the instrument.

According to the perceptions of teachers (N=14, 93.3%), playing in orchestra generates more time to study the instrument. Hallam [6] had already mentioned that participating in group musical activities can often result in more study time. This study seems to confirm that orchestral classes can have this catalyst effect.

The gains in motivation and learning of the instrument are attributed by teachers to social factors (N=10, 66.6%) - wanting to be part of the group and interacting with colleagues, imitating older colleagues, colleagues pulling for each other. Also, they attributed the gains to what students learn musically and socially. The desire to belong to the group may explain how collaborative learning in an orchestral context seems to help the social development of students [26].

However, the data indicate that orchestral practice can also involve problems, namely in the adaptation to play in the group, in the relationship with the teacher and in the choice of repertoire, among others. This last factor – the repertoire – seems to be related to the perception of challenge, which if too easy or excessively difficult can result in demotivation.

Still, the same teachers who mentioned the problems also said that most students feel motivated to play in orchestra and that they strive to overcome the constraints.

Overcoming difficulties seems to indicate that playing in orchestra is seen by students as a challenge that strengthens their perception of competence, generating a significant sense of self-determination [14; 15]. The social character of the task, which involves establishing bonds with peers, makes it a source of motivation. On the other hand, play in orchestra – a task performed with small indications of a teacher-conductor, but without intensive monitoring of the instrument teacher – seems to contribute to the growth of students' autonomy, because of the perception of competence, since orchestral practice seems to be the challenge in which there is a balance between the complexity of the task and the perception of competence to perform it successfully [14; 15].

The analysis of the examples of students referred to by teachers also indicates that some students may set higher learning goals because of successful moments of orchestral practice. One teacher quoted a student, who after an intensive orchestra program, in which she had bubbled her fingers, said, "this is what I want to do!".

According to Bronfenbrenner [16], the progressive complexity of tasks with colleagues with whom emotional ties are established results in a significant intellectual, emotional, and social impact. The data collected allows us to conclude that this happens in orchestral classes.

ACKNOWLEDGEMENTS

REFERENCES

[1] Decree-Law.: DL Nº 344/1990 of November 02. Ministry of Education and Science, Lisbon (1990).

[2] Decreee-Law.: DL Nº 55/2018 of July 06. Ministry of Education (2018).

[3] Conservatório de Música do Porto – Projeto Educativo, 2020.

[4] Fonseca, A. "A Importância da Prática de Orquestra no Ensino Especializado da Música – Implicações no Âmbito da Motivação para a Aprendizagem Instrumental". (Doctoral dissertation, Aveiro University). 2014.

[5] Hallam, S. "Musical Motivation: Towards a model synthesising the research", *Music Education Research*, 4:2, 225-244. 2002. doi: 10.1080/14613800022000011939

[6] Hallam, S. "Motivation to Learn". In S. Hallam, I. Cross, & M. Thaut (Eds.), *Handbook of Psychology of Music*. (pp. 285–294). Oxford University Press. 2009.

[7] Hallam, S. "What predicts level of expertise attained, quality of performance, and future musical aspirations in young instrumental players?" *Psychology of Music* online, 23rd November 2011. https://doi.org/10.1177/0305735611425902

[8] Hallam, S. "Psicologia da Música na Educação: O Poder da Música na Aprendizagem", *Revista de Educação Musical*, nº 138, janeiro – dezembro, pp. 29-34. 2012.

[9]   Bandura, A. "Social Cognitive Theory of Self-Regulation". *Organizational Behavior and decision Processes*, 50, 248–287. 1991.

[10]   Bandura, A. *Personality Theories*. Shippensburg University, USA. 1998.

[11]   Oliveira, T., Silva, N. & Bardagi, M. P. "Aspectos Históricos e Epistemológicos sobre Crenças de Autoeficácia: Uma Revisão da Literatura". *Barbarói*, 1(51), 133-153. 2019. https://doi.org/10.17058/barbaroi.v51i1.6391

[12]   O'Neill, S. & McPherson, G. *Motivation*. New York: Oxford University Press. 2002.

[13]   Sin, H. X., Tan, L. & McPherson. "A PRISMA review of expectancy-value theory in music". *Psychology of Music* 2022, Vol. 50(3) 976–992. 2022.

[14]   Deci, E. & Ryan, R. Self-Determination. John Wiley & Sons. 2010. http://onlinelibrary.wiley.com/doi/10.1002/9780470479216.corpsy0834/full

[15]   Ryan, R., & Deci, E. *Self-determination theory: Basic Psychological Needs in Motivation Development and Wellness*. New York: Guilford Publishing. 2017.

[16]   Bronfenbrenner, U.: "Contexts of child rearing: problems and prospects". *Am. Psychol. APA PsycNet* 34(10), 844–850. 1979. https://doi.org/10.1037/0003-066X.10/34,844

[17]   Moreno, D. et al. "A Child with Cerebral Palsy in Arts Education Programmes: Building Scaffoldings for Inclusion". A. P. Costa, et al. (Eds.): *WCQR 2021, AISC 1345*, pp. 172–190. 2021.

[18]   Robson, C. *Real World Research: A Resource for Social Scientists and Practitioner-Researchers* (2nd ed.). Oxford: Blakwell. 2002.

[19]   Babbie, E. *The Basics of Social Research* (4th ed.). Belmont: Thomson. 2012.

[20]   Gray, D. E. *Doing Research in the Real World* (p. 422). London: SAGE Publications. 2004.

[21]   Hill, M. M., & Hill, A. *Investigação por Questionário. Metodologias de Investigação em Educação*. Lisboa: Edições Sílabo. 2005.

[22]   Yin, R. K. *Qualitative Research from Start to Finish*. New York: The Guilford Press. 2011.

[23]   Crabtree, B. F., & Miller, W. L. *Doing Qualitative Research* (2nd ed.). Newbury Park, CA: SAGE Publications. 1999.

[24]   Beebe, M. "Teaching and Rehearsal Behaviors of Instrumental Music Teachers" (Doctoral dissertation, Bowling Green State University). 2007.

[25]   Boerner, S., & Streit, C. F. Von. "Leadership and Group Results from Symphony descriptions", *Journal of Leadership and Organizational Studies*, *12*, 31–41. 2005.

[26]   Amorim, N. "*O Sistema, a Nova revolução venezuelana*", pp. 30–45. Lisboa. 2009.