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The Teacher's Role in the Self-Regulation of Seven- and Eight-Year-Old Students During a Process of Collective Musical Composition

O papel do docente na autorregulação de alunos de sete e oito anos durante um processo de composição musical coletiva

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Abstract: Understanding the relationship between the teacher's role and students' self-regulation provides insight into fundamental aspects of music teaching and learning. This study aimed to analyse the teacher's functions during a collective musical composition process and identify which actions support students' self-regulated learning. The research focused on a stable group of 12 music school students and involved a teaching experience integrating listening, singing, and composition within the context of music theory. Two of the four sessions dedicated to collective composition—using xylophone-type percussion and students' own instruments—were analysed in depth. Data included video and audio recordings, transcriptions, and the teacher's fieldnotes. Classroom interactions were analysed using grounded theory, combining coding, categorisation, and reflexive triangulation to ensure validity and address the teacher-researcher dual role. Analysis of student interventions during the composition sessions highlighted their patterns of action and allowed categorisation of the teacher's functions within the group. The results indicate that shifting from direct instruction to a guiding role enhanced students' participation,

autonomy, and self-regulated learning in musical composition, while also improving the quality of their creative approaches and strategies.

Keywords: teacher's role. autonomy. self-regulation. musical composition. collaborative learning.

Resumo: Compreender a relação entre o papel do professor e a autorregulação dos estudantes oferece insights sobre aspectos fundamentais do ensino e da aprendizagem da música. Este estudo teve como objetivo analisar as funções do professor durante um processo de composição musical coletiva e identificar quais ações favorecem a aprendizagem autorregulada dos estudantes. A pesquisa focou-se em um grupo estável de doze alunos de uma escola de música e envolveu uma experiência de ensino que integrava a escuta, o canto e a composição à teoria musical. Duas das quatro sessões dedicadas à composição coletiva — com percussão de xilofone e instrumentos próprios dos estudantes — foram analisadas em profundidade. Os dados incluíram gravações de vídeo e de áudio, transcrições e anotações de campo do professor. As interações em sala de aula foram analisadas por meio de Grounded Theory, combinando codificação, categorização e triangulação reflexiva para garantir a validade e abordar o duplo papel do professor como pesquisador. A análise das intervenções dos estudantes durante as sessões de composição evidenciou seus padrões de ação e permitiu categorizar as funções do professor no grupo. Os resultados indicam que a transição da instrução direta para um papel orientador aumentou a participação, a autonomia e a aprendizagem autorregulada dos estudantes na composição musical, além de aprimorar a qualidade de suas abordagens e estratégias criativas.

Palavras-chave: atuação docente. autonomia. autorregulação. composição musical. aprendizagem colaborativa.

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Theoretical Framework

Motivation and learning

The theoretical foundations of this research are based on the idea that motivation is an essential component of learning. In a long-term process of collective musical composition, sustaining motivation plays a key role in learning outcomes (Fontdevila-Sibat & Viladot, 2025); it is the indispensable stimulus that encourages students to learn and engage meaningfully with classroom activities (Beltrán et al., 2020).

The self-determination theory, as postulated by Deci and Ryan (1985), offers a deeper understanding of the conditions that constrain, sustain, and enhance intrinsic motivation (Ryan & Deci, 2000). When motivation becomes internalised, individuals achieve greater behavioural effectiveness, persistence, and performance (Cerasoli et al., 2014; Ryan & Deci, 2000), as well as improved well-being and better integration within their social group. More specifically, contexts that support autonomy, competence, and relatedness help to internalise motivation and integrate these essential human needs (Cerasoli et al., 2016; Ryan & Deci, 2000).

In a learning environment focused on collective musical composition, organisational and structural features promote autonomy, competence, and relatedness through an exchange of ideas typical of *problem-solving* dynamics (Fontdevila-Sibat & Viladot, 2025). According to Boon (2024), creating classroom spaces for interaction, play, and free artistic expression – within an emotionally supportive atmosphere that strengthens self-esteem – encourages motivation and the use of self-regulated learning techniques. Moreover, to foster progress in musical learning, it is necessary to develop not only motivation but also student autonomy, since assuming responsibility for one's own learning becomes a motivating factor in itself (Boon, 2024).

This study also draws on two complementary perspectives on learning development (Pozo, 2022): *cognitive constructivism* and *sociocultural constructivism*. Although both place the student at the centre of the educational process, the cognitive approach focuses on analysing and transforming the internal processes that mediate learning – such as motivation, memory, beliefs, and self-regulation - while the sociocultural approach emphasises social interaction and cultural practices, analysing how these transform people's discourse and actions.

From the perspective of cognitive constructivism, learning is an active process developed through action, integrating doing, feeling, and thinking (Aguilar & Bize, 2011). Learners have different ways of acquiring cognitive strategies that help organise and link new information to prior knowledge. Metacognitive strategies develop understanding and control over one's own learning, while affective strategies break down emotional barriers, fostering autonomy and the social skills necessary to generate new ideas and concepts (Beltrán et al., 2020). Three types of processes emerge in the classroom, according to Beltrán et al. (2020): *motivational processes* related to affectivity, play, art, and spaces for free expression; *metacognitive processes* that invite self-reflection, self-evaluation, conflict resolution, experimentation, and practice; and *emotional intelligence processes* that bolster confidence and self-esteem. Each of these areas includes specific regulatory behaviours (Zachariou & Whitebread, 2019).

To put these strategies and processes into practice, students must be able to regulate them according to their learning needs. This regulation involves motivation, the emotions, behaviour, and cognition (Hadwin et al., 2017). According to these authors, regulation is not static but cyclical and adaptive, influenced by previous experiences and the social context. It implies competence: students make intentional decisions, even when their goals do not fully align with the teacher's.

Self-regulation, co-regulation, and socially shared regulation

Regulation is activated in response to specific challenges, not automatically. It requires an understanding of personal goals to be interpreted appropriately. Furthermore, it improves through interaction, given the important role of social factors in learning. This consideration is particularly relevant to this study, since the learning context is collective and the purpose of the educational work was to enhance interaction among the participants.

Hadwin et al. (2017) identified three types of regulation in collective or collaborative learning contexts: self-regulation, socially shared regulation, and co-regulation. Self-regulation involves the student's metacognitive management of cognitive, behavioural, motivational, and emotional processes through cycles of planning, monitoring, and adjustment. Socially shared regulation occurs when a group jointly assumes metacognitive control of the task, negotiating and adjusting their internal states collectively. And co-regulation refers to the dynamic processes that facilitate or hinder the transition between individual self-regulation and group regulation, depending on environmental opportunities and limitations that shape the transfer of regulatory responsibility.

In the context of learning music, self-regulation means that students actively participate in their own learning, managing their thoughts, emotions, and behaviours. According to McPherson and Zimmerman (2011), this process is cyclical because students continually adjust their performance to the feedback they receive. Six key dimensions can be identified within this process: motivation, method, time, behaviour, physical environment, and social factors. For these authors, self-regulation begins through observing role models – teachers and peers. Over time, students learn to adapt strategies to their needs and manage their time and circumstances more efficiently. According to Núñez et al. (2006), self-regulated learners are not identified

solely by their isolated use of learning strategies, but by their personal initiative, perseverance, and the competencies they display, regardless of the learning context. Students with good self-regulation perceive themselves as active agents, aware that academic success depends primarily on their own actions and engagement (McPherson & Zimmerman, 2011).

To contextualise this research, it is important to note that young children often encounter difficulties with self-regulation, which may manifest in the classroom as problems with distraction or following instructions. However, as argued by Williams (2018), the design of classroom activities that stimulate synchronisation and group coordination not only enhances motor and auditory functions but also self-regulation. Developing metacognitive competence and emotional intelligence is essential for fostering self-regulated learning (Beltrán et al., 2020), since children aged 6 to 8 already show progress in monitoring, planning, and emotional control (Zachariou & Whitebread, 2019). Moreover, group-based activities at this age are especially effective because socially shared regulation develops more conspicuously than individual self-regulation (Zachariou & Whitebread, 2019).

In addition, the planning of collective musical composition encourages students to develop self-regulatory strategies, selecting, modifying, and abandoning courses of action to meet compositional, learning, and functional challenges within the activity itself (Fontdevila-Sibat & Viladot, 2025). Furthermore, as students learn to adapt, explore, recall, and connect concepts, they demonstrate – in line with Hallam (2002) – an ability to regulate the goal-setting, monitoring, and evaluative tasks that evolve throughout the learning process.

The teacher's role and autonomy in learning

As regards this study, the teacher's style or role also merits consideration. According to Ryan and Deci (2000), a more controlling approach tends to dampen students' initiative, leading to poorer learning, particularly when it involves

conceptual or creative processes. It is the teacher's responsibility to promote the development of self-regulated learning strategies in the classroom. This requires a qualitative shift in teaching approaches and in teachers' implicit conceptions of how learning occurs.

According to Pozo et al. (2006), conceptions of teaching and learning music depend on the relationships among teachers, students, and materials and can be grouped into three approaches. The direct approach, based on behaviourism, sees learning as reproducing a score through one-way instruction. The interpretative approach is more elaborate but still insists on teacher control and a focus on faithful reproduction. Conversely, the third approach, aligned with constructivism, promotes student autonomy, with learners developing personal interpretations of music under the teacher's guidance.

Fostering positive attitudes to learning involves allowing students greater autonomy and making them responsible for their own decisions and outcomes. Errors are viewed as opportunities for improvement, and assessment focuses on the learning process rather than on results (Pozo, 2020). This approach means students can work within their zone of proximal development, where effort and teacher support enhance their sense of competence. Likewise, Bruner (1997) underscores the importance of interaction and scaffolding: the expert guides learners until they can perform tasks independently.

As Zachariou and Bonneville-Roussy (2024) affirm, teacher support for autonomy is a fundamental precursor to any self-regulatory process. Observations of music classrooms have shown that a teaching style that fosters autonomy positively influences both learning and student well-being, prompting deeper learning, greater enjoyment, and greater perseverance (Pelletier et al., 2001; Ryan & Deci, 2000). Thus, the teaching of self-regulatory strategies is associated with students'

self-regulated behaviours. It encourages curiosity and a desire for challenge (Ryan & Deci, 2000), and enhances intrinsic motivation – for example, when students are allowed to choose the repertoire (McPherson et al., 2017; Varela et al., 2016).

Observable student behaviours related to motivation and autonomy include active participation in educational activities – for example, when students ask questions or make comments during class (McPherson et al., 2017), exhibit exploratory behaviours (Ryan & Deci, 2000), or show a reluctance to complete the task or stop paying attention. Conversely, students lack autonomy if they follow all the teacher's instructions without any independent self-regulation or engagement (McPherson et al., 2017).

The didactic design of this study drew on Wiggins (1994), with musical composition considered a problem-solving process that reveals the group's overall musical understanding through the analysis of how they approach compositional problems and the strategies they use to solve them. In a problem-solving group, individuals have the opportunity to express and clarify their musical ideas, providing valuable insight into children's musical thinking. Analysing student interactions thus offers a way to explore the cognitive nature of the process (Bamberger, 2006). All learners can participate meaningfully in a group activity based on a musical composition, regardless of their level (Viladot & Fontdevila-Sibat, 2024), and it naturally promotes a sense of ownership, mastery, participation, and group belonging (Fontdevila-Sibat & Viladot, 2025; Younker, 1999).

Methodology

This study assumes that the teacher plays an essential role in fostering students' self-regulated learning during collective music composition work. This idea elicited the following research question: What teaching roles help to activate self-regulated learning in a group of seven- and eight-year-olds during a process of collective composition?

Specifically, the goals were to: a) analyse the teacher's role during a collective musical composition process, and b) identify self-regulatory processes within the student group.

Research design

This study adopted a mixed-methods analytical approach combining quantitative and qualitative procedures to obtain a comprehensive understanding of the classroom processes observed. The analysis was framed within Melero Aguilar's (2011) critical paradigm, which provided the researcher with tools to interpret the social reality of the classroom and analyse educational interactions from a reflective and transformative perspective.

The case under study involved a stable group of 12 students aged 7 and 8 (5 girls and 7 boys) and a teacher, who was also the researcher and first author of this article, at a music school in Barcelona. The study was conducted during the weekly 90-minute music theory classes.

Three specific teaching units (TU) were prepared during the school year, each consisting of four sessions. These units were designed to integrate content on singing, listening, and creative activities to facilitate competency-based learning. Priority was given to learning contexts that encouraged participant interaction, promoting the activation and transmission of musical knowledge. The teacher-researcher adopted a guiding role to foster group autonomy. This created a positive, open classroom atmosphere that encouraged free expression and musical contributions, supporting the collective construction of musical meaning through interaction. These sessions were alternated with more traditional classroom activities focused on music literacy, rhythmic development, ear training, and voice exercises.

The study was organised within the broader framework of four sessions of collective musical composition, which were observed in their entirety. Two of them were selected for detailed analysis based on their similar numbers of participants, comparable lengths, and representativeness: the TU2 final session (March 20) and the TU3 final session (May 28).

Table 1: Number of composition sessions, participants, duration of the session, and analysed cases of input

Composition Session	Total Students	Duration	Student Inputs	Teacher Inputs	Total Inputs
March 5	7	0:11:57	91	55	146
March 20	**10**	**0:24:07**	**99**	**61**	**160**
May 15	9	0:16:23	108	60	168
May 28	**11**	**0:28:44**	**211**	**118**	**329**

Source: Author's database
Image description: Information table with data

The compositions created in the final sessions of each unit (Session 4) had distinct objectives. In TU2, the students worked with xylophone-type instruments to explore the major and minor modes and dynamic changes after listening to Johannes Brahms' Hungarian Dance No. 3. In TU3, the final session focused on composing music in response to a mobile structure built previously by the students themselves. Inspired by John Cage's Works of Calder, they imagined music to accompany the mobile's movement, using their own instruments – piano, guitar, violin, cello, and small percussion.

Before the study began, the participating children's families received detailed information about the project and signed informed consent forms authorising their participation. All ethical procedures were followed, and participants' anonymity was ensured throughout the research process.

Data collection instruments included video recordings of the learning sessions and the teacher-researcher's fieldnotes. The video recordings captured both verbal and non-verbal classroom interactions, while the fieldnotes provided contextual information and reflective observations that complemented the audiovisual data.

The analytical process was divided into two complementary phases. In the first phase, the data obtained from the video recordings were quantified by counting and identifying the frequencies of specific events. This procedure supported the description of the observed classroom dynamics and enabled comparison of the differences between the two analysed sessions.

In the second phase, a qualitative approach was adopted to gain an in-depth understanding of the case. The analysis followed the principles of grounded theory (Glaser & Strauss, 2000), using inductive and emergent analytical processes that allowed categories to arise directly from the data rather than being predetermined.

To conduct this analysis, both verbal and non-verbal interactions were transcribed to analyse classroom discourse. The transcriptions followed the usual criteria for converting oral discourse into written text, aligned – where appropriate – with Catalan linguistic standards while retaining essential intonation markers and the non-verbal communication cues needed to understand the interactions.

More specifically, the analytical procedure involved several iterative steps. First, classroom interactions were divided into meaningful segments corresponding to identifiable communicative or pedagogical events. During an initial open coding phase, each segment was examined line by line and assigned a brief descriptive label capturing the main action, behaviour, or discourse element observed. These preliminary codes were kept close to the data to preserve participants' meanings and avoid premature theoretical interpretation.

In a second step, the codes were compared and grouped through a constant comparative process, allowing similarities, differences, and recurring patterns in the behaviours, discourse, and actions of both students and teachers to emerge. Broader analytical categories and indicators were progressively constructed. The resulting content table included all transcribed fragments, the names of the students and teacher, and a brief descriptive categorisation of each observed event.

Subsequently, categories were refined through axial coding, examining relationships between categories and organising emerging indicators into a coherent analytical structure. This process enabled the identification of recurring patterns and specificities in the observed interactions.

The categorisation process followed three explicit criteria: (a) recurrence of similar interactional patterns across sessions; (b) relevance to pedagogical processes in collective musical composition; and (c) explanatory potential for understanding students' self-regulation and the teacher's mediating actions. Categories were progressively refined through constant comparison between data segments and emerging codes.

To enhance trustworthiness, the coding system and resulting indicators were reviewed via analytical triangulation between the two researchers. The categorisation table and representative excerpts were repeatedly examined and discussed until consensus was reached regarding definitions and boundaries.

Given the teacher's dual role as researcher, particular attention was paid to its epistemological implications. While it allowed privileged access and situated understanding, it could introduce interpretative bias. Reflexive practices, including fieldnotes, systematic comparison with recordings, and external review by the second researcher, were incorporated to ensure transparency and minimise potential bias associated with the insider position.

The subsequent analysis also followed two complementary stages. First, the learning strategies involved in collective musical composition were identified and interpreted (see Fontdevila-Sibat, 2016; Viladot & Fontdevila-Sibat, 2024). Second, the teacher's functions throughout the process were examined, with particular attention to their relationship with students' improvements in self-regulation, which constitutes the main focus of this article.

Results

The results are presented below according to the research's specific goals. Ultimately, the study sought to determine which aspects of the teacher's role facilitate the development of self-regulated learning among seven- and eight-year-old students during a process of collective musical composition.

Analysis of the teacher's role during the activity

To identify the teacher's functions, all 179 teacher inputs from two collective musical composition sessions were analysed (see Table 1), corresponding to the final sessions of the second and third teaching units (TU). Three types of action, behaviour, and verbal communication were identified, each fulfilling different functions within the group during collective composition. We also observed that these functions evolved over time. The indicators used to distinguish the teacher's functions during the sessions were: Intervention, Contribution, and Guidance.

Intervention was a recurrent function at the beginning of the teaching-learning process. It emerged as a way to regulate the organisation of the activity and the group, which – initially – was not yet accustomed to collaborative and creative dynamics and lacked the musical knowledge needed to solve the proposed compositional challenges. The teacher's function here was to manage discipline, listening, overall student behaviour, and the course of the activity.

Transcription Excerpt 1: March 20, *Intervention*

04:06 Teacher: Come on! Let's listen to this group here, this one.
04:09 Patrick: Me? (points to himself with the xylophone mallets)
04:10 Teacher: You're not playing with them, are you? I hope not.
04:11 Patrick: (shakes his head)
04:12 Berta: Yes, you are!
04:14 Teacher: So what about the material – is that the way to treat the Orff classroom instruments?
04:18 Teacher: You can leave the mallets here, and when you behave, I'll give them back to you.

Source: Author's database

Another identified function, Contribution, remained fairly constant throughout the process (as shown in Table 2). It concerned the teacher's understanding of the subject matter. It involved the teacher providing group or individual participants with the information needed to understand or identify emerging knowledge and to improve their technical competence, thereby achieving the desired musical result.

Transcription Excerpt 2: March 20, *Contribution*

5:08 Pol: One thing, Irene – why are all the words like crescendo and accelerando in Italian?
5:10 Teacher: It was decided that way – yes, in Italian!

Source: Author's database

Finally, the Guidance function was most present at the end of the process, when the teacher, as a specialist familiar with the group's collective knowledge, ceased providing new input and instead encouraged the group itself to contribute accumulated knowledge and construct new meanings from the relationships that emerged in each moment.

Transcription Excerpt 3: May 28, Guidance

2:41 Teacher: Any ideas? What was the music we were listening to like?
2:46 Julia: It sounded mysterious.
3:00 Teacher: How should we tackle it then? Who's got an idea for the music we listened to?
3:09 Teacher: Look, Carlos, you start... let's see, what were the notes of that song?
3:10 Carlos: (plucks a string and lets it resonate)

Source: Author's database

The teacher fulfilled these three functions throughout the process, but their distribution and presence changed over time.

As explained above, two comparable sessions were selected in terms of length and number of participants to examine the evolution of the teacher's functions during the activity: the final TU2 composition session (24:07 minutes, 10 students) and the final TU3 session (28:44 minutes, 11 students). The recorded interventions were expressed in percentages to compare the distribution of the three identified teachers' functions: Intervention, Contribution, and Guidance.

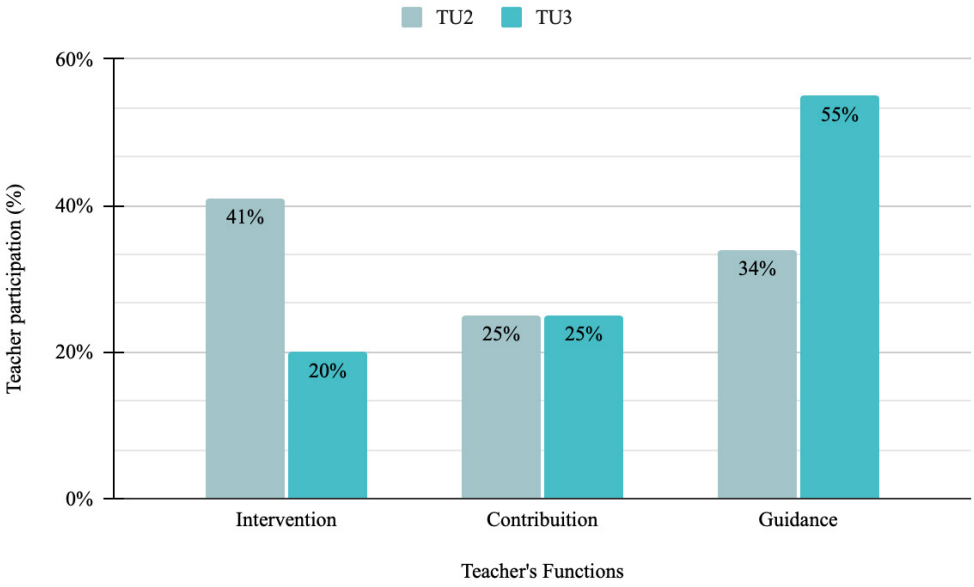
Table 2: Number of analysed cases of teacher input and teacher participation by session

Teacher's Functions	TU2		TU3		Percentage Variation
	Total Inputs	% Participation	Total Inputs	% Participation	
Intervention	25	41.0%	24	20.3%	−50.49%
Contribution	15	24.6%	29	24.6%	0%
Guidance	21	34.4%	65	55.1%	60.17%
Total	**61**	**100%**	**118**	**100%**	

Source: Author's database
Image description: Information table with data

As shown in Table 2, Intervention predominated in the March session (41%), followed by Guidance (34%) and Contribution (25%). In contrast, there were clear changes in the May session: Intervention fell to 20% (−50.49%), while Guidance increased to 55% (+60%). Contribution remained stable at around 25%.

Figure 1: Distribution of the teacher's functions



Source: Author's database
Image description: Information graphic with data

This drop in Intervention in favour of greater Guidance revealed a shift in the teacher's style – from a controlling role to a more facilitative one. Simultaneously, the group's needs changed (Figure 1). The students had learnt to work under guidance rather than control, thus enabling autonomy and self-regulated learning to emerge.

Identification of self-regulatory processes within the student group

The quantitative analysis of classroom interventions confirmed a significant increase in overall group participation – from 160 to 329 inputs, reflecting greater engagement, interest, and motivation among students during the activity (see Table 3).

Table 3: Distribution of student and teacher participation per session.

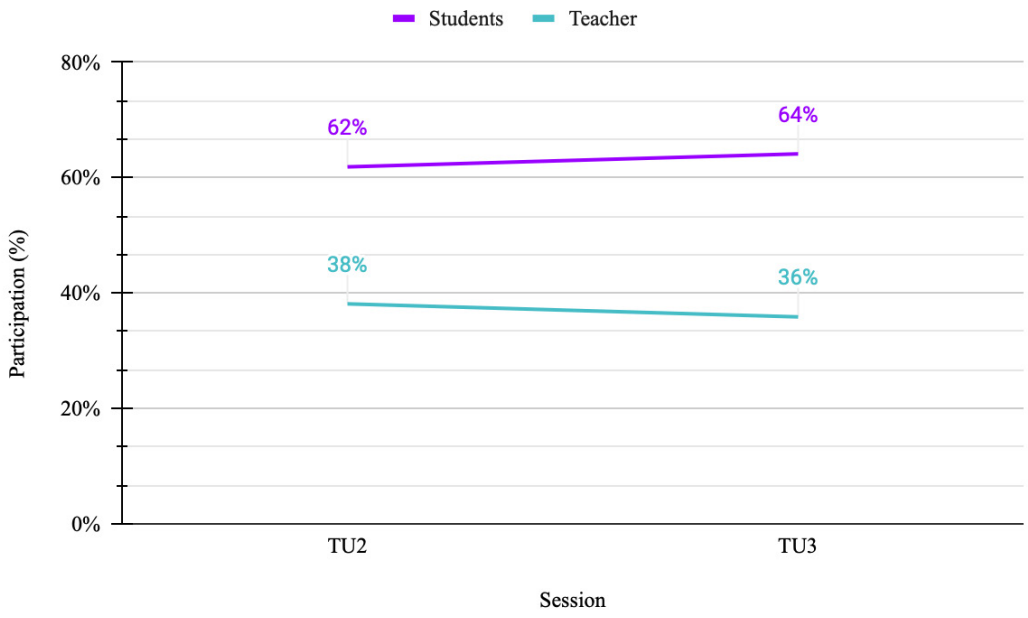
Group	TU2-Inputs	TU2-Participation (%)	TU3-Inputs	TU3-Participation (%)
Students	99	62%	211	64%

Teacher	61	38%	118	36%
Total	**160**	**100%**	**329**	**100%**

Source: Author's database
Image description: Information table with data

Although the teacher's total number of interventions increased (from 61 to 118), their relative proportion decreased (from 38% to 36%) while student participation rose (from 62% to 64%). These results show a slight trend toward fewer teacher interventions, allowing students more leeway to participate during the activity.

Figure 2: Distribution of student and teacher participation

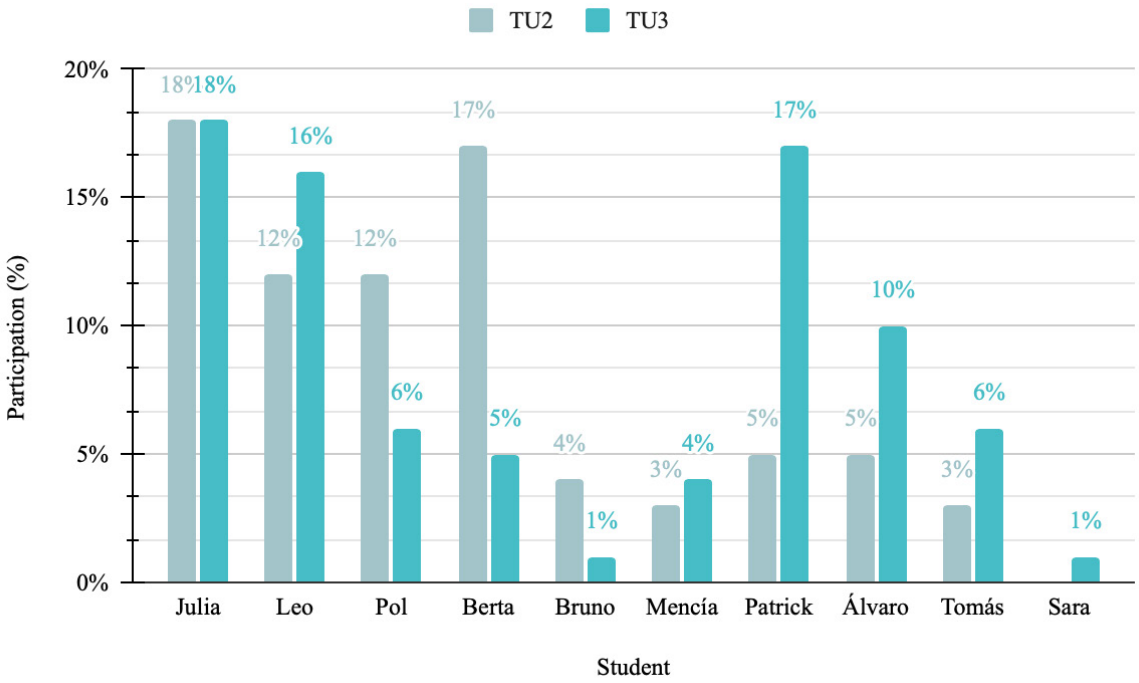


Source: Author's database
Image description: Graphic with data

As shown in Figure 2, the comparison of the two sessions also revealed significant changes in student participation. Engagement was more evenly distributed in the final session, with more students actively involved, indicating that almost the entire group had consolidated its participation.

During the process, some students increased or maintained their participation, while others decreased it. Figure 3 shows that Julia remained highly engaged and Leo, Patrick, Álvaro, and Tomás were notably more participative – particularly Patrick, who became one of the most active students. Mencía also showed moderate improvement, and Sara emerged as a new participant, though still dependent. In contrast, Pol, Berta, and Bruno participated less, with Bruno almost inactive by the final session. Overall, these observations reveal a redistribution of group roles: some students took on more active roles, others reduced their engagement slightly, and new participants emerged. This pattern highlights subtle shifts in group dynamics and provides initial evidence of varying levels of participation and engagement developing during collective musical composition.

Figure 3: Distribution of student participation



Source: Author's database
Image description: Graphic with data

The analysis of the group's actions during the activity revealed clear progress towards more active, autonomous, self-regulated forms of participation. Based on participation analysis, both sessions were compared to identify significant changes in self-regulatory processes. The evolution of students' behaviour as regards participation, autonomy, and learning regulation is shown in Frame 1:

Frame 1: Evolution of students' behaviour as regards participation, autonomy, and learning regulation

Student	TU2	TU3	Observed Evolution
Julia	Participated actively; imprecise use of vocabulary; showed confusion; results did not match intentions; expressed critical and aesthetic awareness; anticipated sound outcomes; assumed a directing and organising role.	Increased participation; more precise vocabulary; anticipated sound outcomes; assumed teacher-like role through action; expressed critical and aesthetic awareness.	*Consolidated an active, reflective role; shifted from guided performance to moderate leadership. Engaged in planning and evaluations, individually and within the group*.
Leo	Participated actively; adapted easily to group work; asked for explanations; made personal connections; expressed critical and aesthetic awareness; assumed a directing and organising role.	Increased participation; recognised musical phenomena; refined other students' ideas; used vocabulary more precisely; corrected peers' statements; assumed a teaching role through explanation.	*Developed towards an expert level; musical and conceptual leadership. Engaged in monitoring and evaluating the group*.
Sofía	Adapted easily to group work.	No later participation.	*Insufficient data to evaluate progress*.

Pol	Fluctuating participation; active engagement; imprecise vocabulary; confusion; repeated others students' ideas.	Reduced participation; repeated conceptual errors; expressed critical and aesthetic awareness.	*Lower involvement and consistency; limited observable progress. Made evaluations of the group*.
Berta	Fluctuating participation; active engagement; repeated other students' ideas.	Contributed ideas through action (onomatopoeia); lower final participation.	*Advances in creative input but with reduced continuity. Individual planning operations*.
Bruno	Isolated; struggled to adapt to organisation; repeated other students' ideas; fluctuating participation.	No recorded participation.	*Drop in involvement; blocked learning and action*.
Mencía	Participated actively; imprecise vocabulary; asked for explanations; showed confusion.	Increased participation; contributed ideas through action; recalled prior ideas; expressed critical and aesthetic awareness.	*Improved autonomy and quality of contributions; made evaluations*.
Patrick	Isolated; fluctuating participation.	Active participation; assumed teacher-like role through action; recognised musical phenomena; adapted sound resources; expressed critical and aesthetic awareness; assumed directing and organising role.	*Strong progress: from low involvement to active and mediating leadership. Regulated and evaluated the group*.
Álvaro	Struggled to adapt to group organisation.	Active participation; assumed teacher-like role through action; used precise vocabulary; recognised musical phenomena; assumed directing and organising role; expressed critical and aesthetic awareness.	Significant progress toward autonomy and group regulation. Monitored and evaluated the group.

Tomás	Fluctuating participation.	Active participation; assumed teacher-like role through action; recognised musical phenomena; expressed critical and aesthetic awareness; assumed directing and organising role.	Shifted from irregular participation to collaborative leadership. Monitored and evaluated the group.
Sara	Not present.	Initially isolated; dependent participation.	Early stage of integration into group process.

Source: Author's database
Image description: Frame with information

When comparing the two sessions, it was observed that several students initially behaved in ways such as isolating themselves, becoming distracted, struggling to adapt to group organisation, or copying their classmates' ideas – indicating difficulties in assimilating the collective creative dynamic. The participation of some students, such as Pol, Berta, and Bruno, fluctuated, and their compositional intentions when exploring sounds were often unclear, relying more on imitation or showing uncertainty in their creative proposals. Others, including Julia, Leo, and Mencía, immediately began participating actively, making original, engaging, spontaneous contributions and adapting easily to group work. However, their vocabulary remained imprecise, and they sometimes got confused during performances.

A clear shift toward more active, self-regulated participation was observed in the final session. Patrick, Álvaro, and Tomás began to organise the group. They offered critical and aesthetic judgments about ideas and provided the group with evaluative and monitoring criteria. Julia and Leo became more involved, using their memories, refining or correcting peers' ideas, monitoring shared knowledge, and anticipating musical results – thus showing individual planning ability. Mencía became more involved as well, contributing ideas and recalling previous joint processes.

In contrast, Pol and Berta's participation decreased somewhat, though Pol began to self-assess his results. On the other hand, Bruno became increasingly demotivated and isolated, preventing his participation, while Sara – absent from the earlier session – displayed initial, group-dependent involvement. As a whole, these patterns reveal emerging self-regulatory behaviours and a redistribution of group roles: while some students assumed greater responsibility for planning, monitoring, and evaluating their own results and collective musical decisions, others maintained lower engagement or remained dependent on peers, highlighting differences in the development of autonomy and participation within the group.

During the process, when the group or individual students faced compositional challenges or needed to improve the activity, some students took measures such as calling for order, correcting behaviours, explaining, clarifying, exemplifying, and recollecting shared knowledge. This set of behaviours, verbal communications, and musical productions was labelled the Student teaching role.

Transcription Excerpt 4: May 28, Student Teaching Role

4:04 All: (searching for the sound of clothes pegs on plastic)
4:20 Leo: (to Carlos) No! Scratch the strings!
4:45 Julia: (shows the pianists how to scratch on the piano lid)
5:10 Pianists: (solve the problem by tapping on the piano lid with their fingers)

Source: Author's database

It was also evident that as the teacher reduced her regulatory and organisational functions (Intervention) in favour of a more guiding role, these same functions began to emerge within the student group itself. Some students assumed organisational and regulatory tasks addressed to their peers, suggesting actions, behaviours, and solutions to achieve the shared musical goal. This process revealed the onset of co-regulation, in which certain students temporarily adopted teacher-like roles – guiding, contributing, and organising, and thus

regulating both the activity and group behaviour. Analytically, these initiatives illustrate the emergence of multiple forms of regulation within the group: socially shared regulation, in which students collectively explore and evaluate ideas; co-regulation, when students temporarily adopt teacher-like roles to guide, contribute, and organise while regulating group activity.

Transcription Excerpt 5: May 28, Student Teaching–Organising Role.

17:23 They all begin playing until Álvaro makes the hand signal for "all together," and Tomás continues playing.
17:35 Teacher: Tomás! We have to repeat it.
17:38 Berta: We have to watch him because he tells us when to stop!
17:50 Tomás: Hey, Bruno? You have to watch him (pointing at Álvaro).

Source: Author's database

This teaching role varied according to the level of the students' actions. Two approaches were identified: teaching through action and teaching through explanation, these being two ways of transmitting knowledge – one more implicit and embodied, the other more conscious and verbal. The teaching-through-action role emerged when a student served as a model for a peer, demonstrating physically how to play or make a sound, often singing or showing the desired result directly. The teaching-through-explanation role occurred when a student assumed the teacher's contributory function – understanding a problem and explaining the solution or reasoning to a peer through verbal and cognitive communication. As observed, this behaviour indicates emerging co-regulation and demonstrates metacognitive engagement, as the student must understand, structure, and communicate musical concepts and strategies; this metacognitive awareness, in turn, supports the gradual development of self-regulation in musical learning.

Transcription Excerpt 6: May 28, Teaching Through Action and Explanation

12:01 Teacher: But when you want to get the hang of something... like this? You have to stop and start again, right?
12:19 Mencía: (plays it)
12:32 Leo: But you have to stop in the middle (to Mencía).
12:42 Berta: Because I was doing it like this (taps the piano and stops).

Source: Author's database

This transfer of roles from teacher to students is key to understanding one of the most significant indicators of the group's progress in autonomy and self-regulation. It is worth noting that the number of students who assumed the teaching-through-action role increased to four in the final session, while only one student took on the more advanced teaching-through-explanation role. This emergent student-teaching role reflects co-regulation, enabling students to apply musical composition and regulation strategies collectively and gradually to move toward self-regulation in musical learning.

Discussion

The analysis of the process of collective musical composition reveals a significant shift in the teacher's style, gradually moving from a more directive or controlling approach to a more constructive, guiding, and mediating one (Pozo, 2006). This shift reflects not only a methodological change but is also directly linked to the evolution of the students' learning. As students gradually assumed a more active role in the collective creative process, they improved and refined their actions. This relationship suggests that the way the teacher performed her role – as a *guide* rather than a *transmitter* – created favourable conditions for developing students' participation, autonomy, and self-regulated learning.

In terms of participation, substantial changes were observed in the flow and distribution of interventions made by the teacher and students. As the teacher reduced her direct presence and moved away from one-way instruction, the group increased its participation, involvement in exploration, and decision-making. This shift favoured the shared construction of knowledge. Participation, in addition to being an indicator of motivation, enables students to develop and apply operational strategies for musical composition (as also noted in Fontdevila-Sibat 2016), thereby reinforcing their sense of competence within the creative process.

Regarding group autonomy and in line with Zachariou and Bonneville-Roussy's (2024) ideas – that teacher support for autonomy is a fundamental prerequisite of any self-regulatory process, an especially relevant phenomenon was observed. Although the teacher's interventions decreased in their direct regulation of the activity and group behaviour, contributory and regulatory functions began to emerge within the group itself. This transfer of functions from the adult to the children can be interpreted as clear evidence of the transition between different forms of regulation described by Hadwin et al. (2011): from socially shared regulation (when students explore, propose sound solutions and evaluate ideas collectively) to co-regulation (when a student temporarily assumes the teacher's role to assist peers) to self-regulation (when a student tries out and evaluates musical possibilities through individual exploration until finding a compositional solution).

In line with Núñez et al. (2006), the most self-regulated students were identified by their notable personal initiative, perseverance, and demonstrated competence – indicators that also reflect a deep involvement in their own learning (McPherson & Zimmerman, 2011).

Finally, the comparison of the sessions led to a deeper understanding of the evolution in the quality of the students' creative approaches and strategies. There was evidence of progressively more effective use of actions taken to address compositional challenges, which indicates not only increased participation but also a qualitative improvement in the strategies deployed (Viladot & Fontdevila-Sibat, 2024; Hallam, 2002) and in the regulation of their own activity – planning, monitoring, and evaluating their results. The trend toward self-regulation not only emerged collectively but also cognitively, consolidating musical learning through reflection, collaboration, and autonomous decision-making.

This study examined two sessions of collective musical composition within a single group, enabling an in-depth analysis of the teacher's role and students' regulatory processes. Although the specificity of the case limits generalisation, it provides detailed insight into classroom change. Future research should investigate these processes in larger, more diverse samples to broaden and validate these findings.

Overall, the results confirm a direct relationship between the teacher's role and students' self-regulation development. The teacher's transition toward a guiding role facilitates the emergence of shared, autonomous regulatory processes – essential elements for progress in creative contexts such as collective musical composition.

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Research ethics committee approval

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