

Article

Collaborative Composition and Urban Popular Music in Digital Music Didactics

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Abstract: Composition is one of the facets of musical activity that allows a more effective way to interrelate theoretical and practical contents in a real context to enhance the development of creativity and collaborative work in the music classroom. Through a qualitative methodology based on participant observation, the results of several projects aimed at implementing collaborative composition in the training of music teachers at the University of Salamanca through audio production tools (DAW) as a pedagogical strategy to address basic knowledge and specific skills of the curriculum of the music subject in secondary education, are synthesized. From this perspective, this work proposes a structured and sequential model for the collaborative composition of musical productions in the field of popular urban music (with special attention to the rock style), addressing and exemplifying in a practical way issues such as the layered structure in the prototypical song of rock bands, the fundamental rhythmic bases, the harmonic function and the development of chord progressions or the creation and development of melodic lines for the voice.

Keywords: digital didactics; music education; composition; digital audio workstation; urban popular music; digital educational objects



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1. Introduction

The digital paradigm has reshaped and revolutionized thinking and learning. It has overcome the limitations of the traditional paradigm of access to content through textbooks, lectures, and blackboards and focused on an often unmotivated and disconnected student body in an art form that is essential to everyone's life. Among other benefits, digital technologies have made it possible to expand and potentially reinvent music teaching/learning processes through rhizomatic resources and virtual communities that promote and encourage collaborative learning based on common interests [1]. These new possibilities enhance meaningful learning and foster students' engagement with the subject, thanks to the possibility of learning in ecosystems that favor co-creation and the construction of shared knowledge while shaping their sense of social and cultural belonging in culturally relevant learning environments that are supportive, engaging, and stimulating. Furthermore, collaborative work, both in digital networks and in the classroom, offers several pedagogical possibilities to the study of music that are essential for moving music education towards a more meaningful and inclusive cultural and educational context [2] in tune with goals and targets 4 and 5 of the 2030 agenda.

This proposal analyzes the possibilities of music production platforms (digital audio workstations) for the development of methodological protocols aimed at promoting interactive composition as a process for meaningful learning in the music classroom in secondary education. In full harmony with the theoretical and epistemological paradigm that motivates curricular regulations and learning-teaching processes at present, based on the figure of the student as a promoter agent of self-regulated learning processes [3] based on problem solving, the development of critical thinking and the empowerment of personal

autonomy, the present proposal addresses the process of collaborative composition as a scenario for the achievement of three essential objectives: the development of technological competence in a context of real intervention on the matter that constitutes the musical phenomenon and through highly specialized resources dedicated to the musical field; the acquisition and assimilation of basic knowledge related to rhythm, harmony, and melody; the analysis and understanding of the aesthetic and stylistic elements that make up the styles of what is known as contemporary urban popular music, the basic elements of musical language and compositional technique, the planning, design and execution of musical projects; and finally, the development of the capacity for teamwork and problem solving through consideration and consensus with the rest of colleagues and tutors, as a means of discovering artistic and expressive potential, both individually and collectively, and a significant understanding of the culture of our time as an element of social integration and professional development [4].

To this end, a synthesis of a methodological protocol is proposed for the collaborative composition of works adjusted to the formal, aesthetic, and expressive canons of contemporary popular music, in this case, rock as an archetypal genre of musical expression that has colonized all cultures and territories during the last decades [5].

Through the process that establishes the composition of simple work in the style of rock music, aspects and concepts of musical languages, such as tonality, harmony, melody, structure, form, pulse, etc., are unraveled and assimilated in a contextualized and interrelated manner, with concepts of music production technologies such as digital writing, virtual instrumentation, and sampling, mixing, effects, post-production, etc., aimed at discovering and understanding the constituent features of rock music as an autonomous style that allows students to critically evaluate this art form.

The didactic potential of the methodological proposal lies not only in the possibility of combining musical and technological concepts in a real learning environment [6] related to a type of music typical of the pupils' contemporary society; furthermore, it constitutes a learning environment that fosters the development of the pupils' expressiveness and artistic capacity at group level, reinforcing both their commitment to the subject and their respect for the opinion and social and aesthetic positioning of their peers as an unavoidable basis for the development of a more inclusive educational and social environment. Ultimately, the proposal is shown as an example prone to development and adaptation, depending on the context and formal or conceptual requirements, so that it can be adapted to different genres and styles of contemporary music (in which musical production on digital platforms is a requirement) and/or to the level of difficulty or musical and technological competence of the classroom.

2. Theoretical Framework

Collaboration is a dynamic and creative process [7] which, in recent decades, and thanks to digital information management and access systems, has colonized a vast majority of forms of knowledge generation and intellectual products, from educational or informational resources to digital academic publishing in the philological or musical field [8]. Collaborative practice in the specific field of music education involves activities and approaches aimed at students working individually or in groups (pre-determined or random) in which partial tasks and performances are developed that contribute to a collective product related to analyzing, creating, producing, or performing music. These practices are essential for developing important musical, cultural, and social skills, such as fostering creativity, developing technological competencies, or promoting social interaction between students [9]. As pointed out by [10], it can be used especially with young students who need to improve not only their compositional skills but also their social skills.

On the other hand, each collaborative process incorporates its own dynamics and must be designed and constituted according to the needs, the specific objectives of each learning situation, or the previous competence level of the learners in the classroom. In the specific context of collaborative musical composition, as a process in which several

groups of pupils work together to create a piece of music, it is necessary, in a preliminary way, to establish a shared vision and a shared objective in relation to the delimitation of tasks or the essential requirements and characteristics on which the composition is built at a formal level, tonality, instrumentation, genre, style, etc. In this sense, all collaborators must have a clear idea of the result to be obtained and of the artistic direction on which the compositional process is based. Although there are no universally agreed guidelines that specifically define the processes, rules, or basic requirements related to specific genres or styles, in recent decades, there has been a proliferation of resources and shared spaces (such as forums, blogs, or educational platforms) dedicated to different facets of musical activity, including composition [11], that facilitate and serve to share and discuss many of these issues, in a specialized way, through open and plural communication, the exchange of ideas or critical debate for learning.

In particular, it is essential for the tutor to assign specific roles and responsibilities boldly and equitably to each group participating in the compositional work in order to speed up the process, reinforce the feeling of belonging to a team, or enhance and recognize the particular competencies and skills of each group member. This ensures that everyone has a defined role, knows their roles and responsibilities, and establishes synergies of interaction with the rest of the members in relation to the interrelation of tasks and processes. Among the set of essential tasks, on a musical level, the development of rhythmic structures, the creation of harmonic progressions, the composition of melodic lines or the writing of vocal texts, and the design of arranging and sound production processes should be highlighted. All these issues must be addressed in relation to basic knowledge, the development of key and specific competencies, and, in short, the objectives and precepts present in the curricular programs with the ultimate aim of combining theoretical and conceptual knowledge with artistic practice.

Most of these tasks can be centralized in software platforms such as digital audio workstations (DAWs), cloud storage resources, or educational project management software, which facilitate real-time collaboration, version control and tracking, and delocalized and asynchronous collaboration [12]. These technological resources provide the flexibility and adaptability required for this type of project and allow access to and manipulation of sound material in a very intuitive and interoperable way, enabling the development of creativity, critical thinking, and the musical skills and competencies necessary for music creation. However, to extract their full potential, students must be open to experimentation that involves exploring different ideas or analyzing different styles and approaches under the premise of finding a consensual balance between individual creative expression and the collective vision of composition [13]. Indeed, studies have shown [14] that the group composition model appears to be effective as a heuristic tool. To this end, it is essential to create structures that favor open, effective, and organized communication through regular communication channels and routines aimed at exchanging ideas, discussing problems or difficulties, providing information, and solving eventual discrepancies by encouraging constructive and respectful debate under the objective of feedback and positive reinforcement to each group and the unitary collective [15]. In this sense, it is essential to achieve an effective compromise between equal and inclusive participation among students from the perspective of enhancing a sense of shared responsibility while encouraging everyone to contribute their most notable skills and particular points of view as an incentive to develop richer, more heterogeneous, and participatory creations [16]. This issue involves identifying strengths and possibilities at the individual level that allow for more effective and operational task allocation, allowing different groups of pupils to take the lead in specific sections or aspects of the composition according to their self-perceived competencies and skills [17].

In this context, the teacher/tutor will adopt the role of guide in a process that develops iteratively and in which ideas are distilled, developed, and concretized throughout a process that involves systematic and recurrent evaluation of the results obtained. At these stages, the teacher will encourage discussion in relation to the theoretical or conceptual issues

involved in the process or task being analyzed. This cyclical and iterative perspective allows students to analyze and evaluate their peers, experiment with different compositional approaches and techniques, or try different solutions to a given problem [18], opening opportunities for collaboration [19]. Similarly, the tutor is key to organizing the ideas flowing in the workspace, considering or discarding revisions and modifications brought to each stage of the process, as well as managing a central repository that houses all materials related to the project, including audio recordings, written notes, and sketches, scores, lyrics, etc. [20]. Teachers should start from the premise that it is more important to evaluate the process than the final product [21], bearing in mind that the challenge for music education is to set agentive aims that allow the students to become capable agents in the musical world [22].

3. Objectives and Methodology

3.1. Objectives

This paper aims to model the process of collaborative composition as a pedagogical resource to address the curricular knowledge and specific competencies present in the regulations of the subject of music in the educational context of secondary education in Spain [23]. Focusing on a case study based on the creation of a rock-style composition, using project-based learning (PBL) in the digital environment [24,25], the aim is to address central issues of the music curriculum, such as the compositional foundations characteristic of urban popular music; understanding the paradigmatic formal and functional structure of rock songs, or the possibilities of discursive and aesthetic development in the rock music paradigm, through artistic experimentation using digital music production (DAW) resources. Specifically, the aim is to address the following curricular contents and favor the acquisition of the following specific competencies:

- To create artistic, musical proposals using voice, musical instruments, and technological tools to enhance creativity and identify opportunities for personal, social, academic, and professional development;
- To explore the expressive possibilities of different compositional techniques and musical arrangements contextualized in the field of urban popular music as a resource for understanding, experimentation, and artistic expression through music creation.

At the same time, the basic knowledge established in the blocks *Interpretation, Improvisation, and Performative works creation* and *Contexts and Cultures* established in the aforementioned regulations [23] are worked on:

- Popular, urban, and contemporary music: to characterize structurally, formally, and stylistically the popular urban music of the 20th century with special attention to rock music and to know the rhythmic, harmonic, melodic, instrumental, and expressive devices that make up the aesthetic and stylistic paradigm of rock music;
- Musical and audiovisual projects: use of the voice, the body, musical instruments, media, and technological applications;
- Basic elements of musical language: knowing the rudiments of creating rhythmic structures in the rock style;
- Digital tools for musical creation: to know the essential devices and techniques for the digital production of musical creations, with special attention to DAW platforms for the development of specific technological competencies in the field of music in secondary education;
- Rules of behavior and participation in musical activities.

At a procedural level, the proposed model develops a series of activities of a sequential and progressive nature, designed in relation to the structural hierarchy of rock music, aimed at creating a composition in this style that serves as a guide for teachers who want to work on popular urban music in the music classroom.

3.2. Methodology

The present work is developed through a qualitative methodology, from the point of view of participant observation [26–30] that synthesizes the results of previous experiences in the implementation of collaborative composition activities in the training of secondary music teachers at the University of Salamanca. The sample of students ($n = 30$) had previous knowledge of music, most of them coming from musicology degree studies or music conservatories. However, none of them had previous teaching experience in the classroom or specific rock music instruction. On the other hand, the data inferred from the sessions were collected with the informed consent of all participants through questionnaires before and after the sessions. The questions were designed around three blocks of content: musical, creative processes, and social interactions.

The set of results, observations, annotations, interactions, and contextual and procedural details previously observed motivate and support the development of a methodological protocol to develop collaborative composition processes in the music classroom, according to the model for the design and development of activities based on curricular content for project-based learning (PBL) set out in [31] and following the principles of integration of new technologies of the Technological Pedagogical Content Knowledge (TPACK) model [32]. From this theoretical perspective, we propose a methodological protocol for designing and implementing collaborative composition projects, which allows us to interrelate issues and theoretical content in the field of practical experimentation and in relation to basic knowledge and key and specific competencies in the subject of music in secondary school. Based on the postulates present in [31], a model with the following essential characteristics is articulated:

1. *Student-centered*. Students construct their own knowledge through collaboration with the rest of their classmates under the auspices and tutoring of the teacher;
2. *Teacher facilitation*. The teacher acts as a guide and moderator while students discuss, analyze, and make decisions;
3. *Development of critical thinking*. Cultivates intellectual development and helps students use critical thinking and develop autonomy in the teaching–learning process;
4. *Collaborative interaction and research*. Meaningfully uses and interrelates different resources in the classroom, as well as in virtual communities and networks where they assume professional socio-cultural roles through the use of specific tools to solve problems and explain or present information generated in the project;
5. *Assessable product*. The process culminates in artistic or cultural products that allow assessment both from the point of view of artistic or cultural value and at the level of competence in procedural development.

4. Didactic Proposal and Methodological Development

The development of the proposed methodology that we present has as its starting point a series of prior questions that the teacher must bear in mind to frame the activity in the particular context of his or her classroom/student. Firstly, as composition is closely related to aural skills and competencies, it is necessary to encourage practices and routines for listening and critical analysis among students to foster the acquisition of both an aural vocabulary and a semantic and terminological field with which to express technical issues. Similarly, it is necessary to always start with projects that make reference to highly structured musical forms or styles and that are easily systematized in order to reduce, as far as possible, the fear of the unknown and the fear of the “blank page”. Predictable structures and elements help to engage in the creative process and, at the same time, allow for a gradual sequencing of the learning process, giving students the opportunity for self-regulation in compositional activities [33].

From this point of view, the composition of a song in the rock style is proposed as a starting point since its formal structure is paradigmatically adapted to these considerations. In this style, it is common to compose using the layering technique, which allows the process to be approached in a systematized way, working and analyzing in a hierarchical

and individualized manner the creation and functional role of the rhythm section (bass and drums), the harmonic progression that structures the work, the arrangements of guitars and/or keyboards or the melody sung by the voice. In addition, sequencing in highly structured processes allows for the imposition of constraints on the compositional process. These help to build confidence and develop creativity, especially in the early stages, by limiting the infinite options available and providing a solid scaffolding for students to build on. However, methodological systematization must allow for an appropriate balance between the assigned restrictions and the creative freedom that allows for free artistic expression and experimentation [34].

Within this framework, the proposed model aims to serve as an initial guide to the compositional process in the rock style, contemplating the essential elements that characterize this type of music independently of the multiple forms, structures, or arrangements that this genre can adopt. In this way, the work on more complex or evolved forms can be understood as a methodological extension that, in the same way, can be followed and structured around the proposed guide.

Rock music encompasses a wide variety of song forms; however, there are several common structures and forms that are recurrently used. Of these, we propose the alternating verse–chorus structure (ABABCB) as one of the most popular song forms used in rock music as a basis for the development of the composition. The examples given refer only to the structure of the verse, with the understanding that the compositional process in the chorus develops in a similar way.

At the operational level, the collaborative composition is structured around the sequencer use of an online music text editor (MuseScore), the audio production on a freely available online DAW such as BandLab, and optionally post-production of the product at the mixing and effects level on a professional DAW such as Logic Pro or Ableton Live (Figure 1).

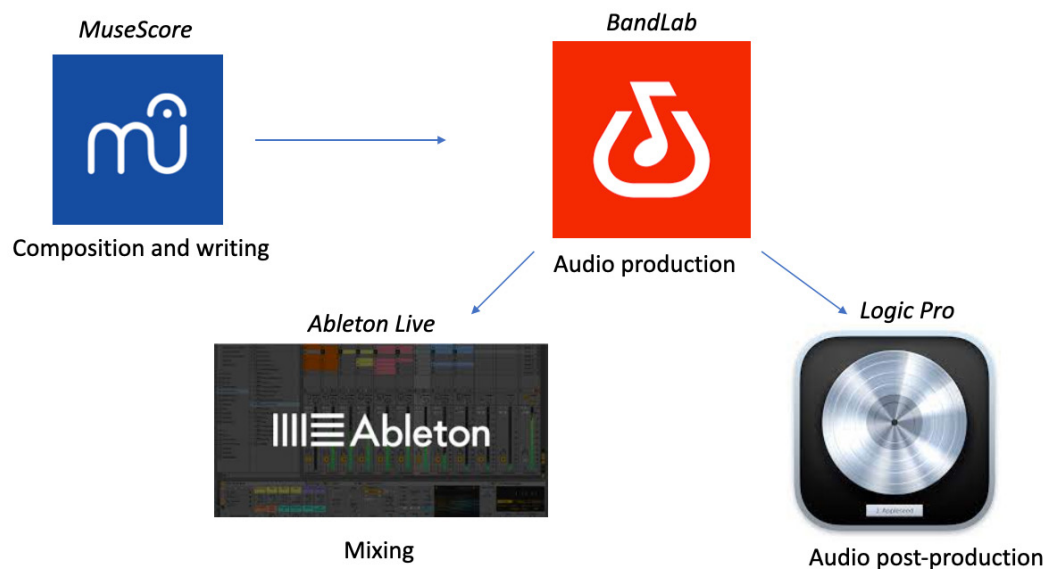


Figure 1. Workflow and digital resources for collaborative composition. Source: own elaboration.

At the level of collaborative work, the different tasks will be assigned to a series of previously established groups of students, according to their preferences and/or previous competencies, who will discuss and develop the assigned work in a collegiate manner. In an iterative way, all the tasks carried out by each group will be analyzed, debated, and evaluated by all the students, establishing collective synergies aimed at reinforcing and cohesion of the group work.

4.1. Rhythmic Structure

The rock rhythm section usually consists of drums and electric bass, which interact in a coordinated manner to create a solid and stable base to convey momentum and energy to the music. Within this framework, the drums play a crucial role in setting the tempo and providing the backbone of the structure, a rhythmic structure that is characterized, in a generic and essential way, by the use of quaternary measures (4/4) in which the main accents move from beats 1 and 3 to beats 2 and 4. The bass, for its part, has a double rhythmic-harmonic function; it reinforces the beats of these measures by rhythmically aligning itself with the bass drum and marking the fundamental notes of the harmonic progression.

Drum and Percussion Bases

As a starting point, we propose the basic rhythmic scheme of rock drums (Figure 2) with the bass drum on beats 1 and 3 and the snare drum with shifted accents on beats 2 and 4, and the hit-hat marking all beats (quarter notes). From this structure, variations in the bass drum, snare drum, or “hi-hat” can be sequentially exemplified, analyzing their impact on the perception of the groove or directionality of the musical discourse.

Pulse	1		2		3		4
Hi-hat	●		●		●		●
Snare			●				●
Bass drum	●				●		

Figure 2. Basic scheme for pulse distribution in the rock battery. Source: adapted from [35].

From the most basic scheme, it is recommended that students experiment with the most obvious and natural variations on both the bass drum and the hi-hat to configure the desired rhythmic scheme. In this case, the composition and playback possibilities of DAWs allow instant feedback on the effect produced. The following example (Figure 3) shows a variation of the basic scheme with the “hi-hat” developed in eighth notes, giving the rhythmic base a lighter and more dynamic feel.



Figure 3. Rhythmic scheme of a rock drum kit with the “hit-hat” in eighth notes. Source: own elaboration.

The following example (Figure 4) proposes the basic variation on the bass drum with the third beat in eighth notes; this variant can serve to exemplify how each element (and each beat) of the drum parts can be progressively developed to build more complex rhythmic patterns that provide variety and dynamism to the composition. Experimenting with these possibilities is an excellent activity to understand the effect of rhythmic structures on the overall perception of the work. From this point of view, it is also interesting to analyze works by well-known artists in order to work on listening by recognizing the rhythmic patterns of canonical rock songs.



Figure 4. Rhythmic scheme of a rock drum kit with bass drum variation. Source: own elaboration.

The following example (Figure 5) proposes an eighth note in counterpoint on beat 2 as an appoggiatura for the bass drum on beat 3; this resource strongly accentuates and marks beat 3 and highlights even more clearly the displacement of the essential accents on beats 2 and 4 in the snare.



Figure 5. Drum pattern with appoggiatura on pulse 3. Source: own elaboration.

From these examples, it is possible to collaboratively create a thesaurus of rhythmic variations by introducing faster figures, dotted notes, or rests that serve as a resource to create bases that respond to the creative thinking of the students.

4.2. Harmonic Structure

As a starting point, and by way of example, the progression (Imaj7)-VIm7(ascending)-IVmaj7 (IIm7)-V7-Imaj7 is proposed (Figure 6). This is a paradigmatic progression of rock music that synthesizes the use of the essential elements at the level of the harmonic function and allows us to observe events of substitution and variation in the progression

that highlight some of the essential rules of musical syntax and the paradigmatic function in the construction of harmonic sequences. Furthermore, it can be analyzed and aurally assimilated through examples of such popular and archetypal creations within rock culture as Every Breath You Take (The Police) or Stand By Me (Ben E. King).

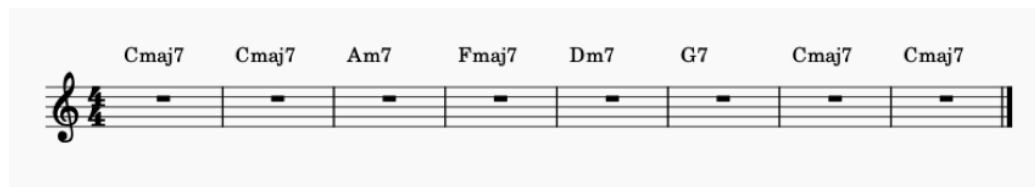


Figure 6. Example of a harmonic progression very characteristic of rock music. Source: own elaboration.

To facilitate the progressive study of harmonic function and the creation of chord progressions, it is proposed to experiment with variations of the progression, followed by critical debate and analysis of its creative and aesthetic possibilities; as a starting point, a series of variations is proposed with which to work on these questions (Figure 7):

I– $\uparrow$ VI–IV–V V–I– $\uparrow$ VI–IV IV–V–I– $\uparrow$ VI

Figure 7. Proposed progression variations examples. Source: own elaboration.

As in the case of the rhythmic base, it is interesting for students to identify and create a set of basic progressions and links, characteristic of this musical style, which allow them to expand the possibilities of expression and enable a greater degree of flexibility in relation to the composition of the melodic line.

4.2.1. Bass Lines

The most archetypal and fundamental bass lines in rock music are developed through patterns that complement the rhythms of the drums, usually highlighting the tonics and fifths of each chord. This reinforces the harmonic structure on which the rest of the instruments and vocals will act and helps to create a sense of groove and drive in the music through synchronous playing with the drummer's bass drum.

From this fundamental starting point, variations can be introduced based on the approach to the tonic by means of chromatic and diatonic passing notes, which are also introduced as a rhythmic appoggiatura that reinforces the resolution on the tonic of the following chord (Figure 8).



Figure 8. Examples of bass lines based on the root note and the variation by chromatic and diatonic approximation. Source: own elaboration.

Another common way of developing classic rock bass lines is to create patterns and motifs based on the chord factors (tonic, third, fifth, and seventh) with the possibility of adding diatonic tensions (second, eleventh, or thirteenth) to create lines with smoother and more melodic transitions (Figure 9). All these possibilities can be explored creatively by the students in conjunction with the rhythmic developments of the drums.



Figure 9. Example of bass lines created with chord factors and diatonic tensions. Source: own elaboration.

4.2.2. Guitar and Keyboard Arrangements

Rock guitar rhythm parts play a crucial role in driving the energy and forming the foundation upon which the rest of the band builds its melodies and solos. Generally, guitar parts can be created in rhythmic unison with the bass and drum or contrasting parts, usually in counterpoint through rhythmic variation. Students can experiment with the effect on the work of incorporating accents on certain beats or using techniques such as staccato or palm muting; this technique adds a percussive and forceful quality to rhythmic guitar parts, especially when combined with fifth chords. A good example of a departure from which to develop rhythmic variations is to start with eighth-note parts over fifth chords (in line with the progression) played with palm muting, as shown in Figure 10. Similarly, creative possibilities can be increased by creating acoustic guitar parts in songs of a more expressive character based on arpeggios, as shown in Figure 11.

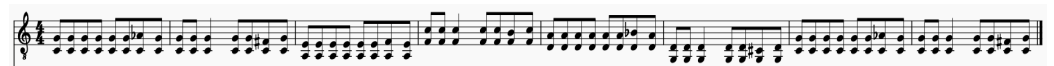


Figure 10. Guitar part with plucked chords and palm muting technique.



Figure 11. Example of arpeggios in “finger style”.

Keyboard parts can make very efficient use of syncopation to introduce contrasting and surprising effects through offbeats or unexpected rhythmic placements. It can create a sense of rhythm and momentum in rhythmic parts. This technique allows the rhythmic spectrum to be extended almost infinitely, producing very effective layered structures with bass and guitar (Figure 12).



Figure 12. Examples of rhythmic displacement in keyboard part to create contrasting instrumental layering effects with the rhythm section.

4.3. Melodic Lines for the Voice

The creation of vocal melodic lines, although a complex task and subject to inspiration and professional competence, can be simplified by the development of simple melodic

motifs created from groups of six or eight notes based on the chord factors present in the harmony. These can be agreed collectively with the help of the teacher. Although the identification of a melodic motif can be a starting point, there is a need to develop a melodic motif to bring lyricism, depth, and interest to the melody. Students can explore a myriad of expressive possibilities using the following techniques and resources:

- Chromatic and diatonic approximations to chord notes;
- Use of passing notes and tensions between notes of the chord;
- Variation of the motive/s by means of disjunct/conjunct movement of the melodic line.

5. Results and Conclusions

DAW platforms are an essential tool for enabling the creation, recording, editing, and mixing of music on the computer, integrating disciplinary, technological, and pedagogical contents, as reported in Tejada and Thayer (2020), and centralizing the collaborative process of creating contemporary popular music and providing students with hands-on, collaborative, and experiential learning opportunities. In this sense, the data reveal that participants have acquired a deeper understanding of how the different elements and facets of musical expression work in a contextualized way to some of the music of their own environment and that they have assimilated the essential elements of different musical styles such as the construction of melodic lines, harmonic structures, or rhythmic bases. These results correlate with the results provided by Biasutti (2012) and show how it is necessary to articulate strategies to interrelate curricular learning with the enhancement of creativity through group composition activities.

In a subsidiary way, most of the students (90%) have reported that they have seen their musical competencies reinforced through composition, as after this research, they explain that they listen actively more frequently, as well as critically analyze the identification and use of the different musical techniques involved in the creative process of the urban popular music they listen to daily. Also, most of the students (83%) reported that their autonomy in decision-making in group work after completing the tasks had improved, as well as the social climate of the class. Finally, the students were asked about the more artistically charged activities and stated (76%) that tackling a composition project within the framework of rock music has allowed them to enhance their creativity and their ability to express musical ideas. In accordance with the results expressed in Blackburn (2020), creational processes where ideas are given tangible expressions make it easier for students to make creative choices and ensure that their ideas are translated into meaningful projects through personal expression.

In addition, the process has had direct implications in other essential areas of musical practice, such as performance, fostering a deeper understanding of performance techniques and the functions of each performer or instrument.

In short, at a pedagogical level, collaborative music composition has proved to be a stimulating learning strategy (96% agreed) for musicians of all levels, combining curricular content with the acquisition of technological skills while encouraging teamwork and autonomy in problem-solving through the development of creativity and experimentation with music as an artistic and cultural phenomenon.

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