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Innovative and disruptive pedagogies in music education: A systematic review of the literature

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Abstract

This paper presents a Systematic Literature Review (SLR) about pedagogical innovation and disruption in music education. A rigorous SLR process was applied to the selection of papers related to innovative practices in music education at different educational levels and in a range of contexts. Although there are similar studies on innovation in education, there is no SLR on pedagogical innovation and disruption in music education using this method. The purpose of this study is to present an example of how to do an SLR and to share the findings of the review itself. We also provide a snapshot based on a tight SLR process of some instances of innovation in music education that, in some way, are drawing the paths to be followed in future investigations. According to the categories of innovation that we have established to analyze our corpus of papers, disruption is produced by modifying four fundamental factors in the act of learning (purpose and context learning, teacher/student relationship, and learner role). These factors can contribute to developing a more flexible and open curricula incorporating a holistic, collaborative, and interdisciplinary vision of learning. We consider that the value of this study lies in reflecting a systematic methodological process for the analysis of the scientific literature as well as the findings.

Keywords

Arts studies, didactics, disruption, educational innovation, educational research, state of the art review

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Theoretical framework/background

In the first quarter of the 21st century, society has been characterized by the constant transformations produced by the prevailing neoliberal logic, technological development, globalization, unbalanced relations with the environment, uncertainty in a changing world, and socio-cultural fragmentation (Wagner, 2010). A liquid (Bauman, 2007) and *knowmadic* (Moravec, 2013) society appears to demand flexible and diverse pedagogical models that promote a comprehensive, plural, democratic, and independent education that is open and oriented toward achieving the integral development of human being in its physical, cognitive, emotional, and social dimensions. This education is one where relationships between students and teachers allow for research, experimentation, critical reflection, and the creation of knowledge rather than its consumption (Moravec, 2011). It is necessary to consider the reality that surrounds the educational act, the learning experience inside the classroom, assuming an ecological approach to learning in which classrooms are permeable to what happens outside them and in which it is assumed that students have knowledge acquired in other contexts that can enrich the learning process, thus transforming the school and community culture (de Sousa Santos, 2010; Martínez-Rodríguez et al., 2018).

Pedagogical innovation arises in response to these demands that society is making on schools and involves updating traditional methodologies and replacing them with others that are more appropriate to this context (Hanson, 2018). Many of the pedagogical trends that we find today include the use of technologies, the hybridization of different models (e.g. Blended learning), or more participatory and collaborative processes. However, very frequently, these innovations are incorporated in schools under the influence of temporary short-term trends, with little reflection on why they are being done and without considering scientific studies that support their benefits for learning (Ferrero et al., 2016, 2021). In recent years, and linked to the concept of innovation, the concept of disruption has also emerged in reference to forms of transgression, rupture, and radical transformation in educational practices. This concept initially appeared to be linked to purely technological aspects (Bower & Christensen, 1995). However, authors have emerged who present new, more creative approaches and who understand disruption not only from a technological point of view but instead seek to transcend this technological dependence to focus on shared creation processes (Al-Zahrani, 2015; Anderson & McGreal, 2012; Hutchings & Wuinney, 2015).

The study of these processes of innovation/disruption was precisely the starting point of the *Nomadis* R&D project (Nomads of knowledge: analysis of disruptive pedagogical practices in Secondary Education). The systematic literature review (SLR) presented in this paper is linked to it. Our review focuses on music education as one of the main centers of interest of this project. One of its objectives is to map and analyze educational innovation/disruption practices that use the arts as mediation. This means recognizing them not only for their esthetic value but also as a means of expression that contain knowledge, ideologies, and a language of their own, which gives them a leading role in the classroom as they facilitate learning experiences that promote creativity, participation, expressiveness, and rationality (Gutiérrez & Prieto, 2004; Ocaña-Fernández, 2020).

Although musical experience as an educational mediation can be considered an innovation, many curricular models follow traditional music teaching patterns when organizing such experiences in the classroom. This is particularly evident in music conservatories, where there is a stronger tradition and a structural lack of encouragement of autonomous learning and creativity through social interaction (Carey & Grant, 2015). As in other subjects, the challenge lies in integrating knowledge from an ecological conception of learning (Barron, 2006; Wallerstedt & Lindgren, 2016), and music education must consider the fact that musical practices and the contexts in which they are produced are increasingly diverse (Martínez-Cantero, 2017).

In this sense, innovative/disruptive pedagogical trends in music education follow the same dynamics as those in other areas, with Information and Communication Technology (ICT) related

initiatives monopolizing the discourse when talking about disruption (Ocaña-Fernández et al., 2020). Nonetheless, due to the specificity of music, the interest in technological integration is more focused on the creation of artistic products (Julia et al., 2020). However, we can also find academic texts discussing innovation and disruptive proposals in music education from positions (e.g. the use of the body and the mind in the Kokas Pedagogy) far removed from technology (Vass, 2019).

Despite all these works that refer to the trends in innovative/disruptive practices in music education, no systematic reviews have yet been conducted on this issue. Thus, with this work we propose two objectives: on the one hand, to provide an example of how to carry out a systematic review of the literature and, on the other hand, to approach the state of the art in relation to this subject through the analysis of the papers published in the last 5 years in journals of impact. We have used the criterion that the works be published in impact journals because it seems relevant to us to identify the extent to which the implementation of innovative practices is associated with research processes. In the review, we focused on analyzing the aspects that characterize innovative practices in music education and determining to what extent these can be defined as disruptive according to the factors and levels of innovation established by Burden et al. (2019).

Methodology

This research consists of a systematic review of the literature on innovative/disruptive pedagogical practices in music education. For this purpose, we adapted the review model of Burden et al. (2019) and posed the following research questions:

RQ-1: What aspects characterize innovative practices in Music Education?

RQ-2: Which of these initiatives can be considered disruptive according to Burden et al.'s (2019) factors and levels of innovation?

The search strategy for the articles employed the following sequence:

1. Select key search terms in English based on the research questions.
2. Identify other terms in the literature that could act as synonyms to enrich the search.
3. Design a search equation with key terms and Boolean connectors.[1]
4. Select the most relevant databases for the research topic and check if the documents are on SJR.
5. Apply the search equation to the abstracts, titles, and keywords of articles.
6. Limit the search to publications within the last 5 years.
7. Manage search results in a data table.

The key terms derived from the research questions were “innovation,” “creativity,” and “music education.” Other terms were identified from these main key terms that could act as synonyms (see Appendix B).

These were selected for the search because they are referents in the field of Education Sciences in English (Scopus and WOS), and in the same field but in Spanish (Eric and Dialnet):

Dialnet (https://dialnet.unirioja.es/)
Eric (https://eric.ed.gov)
Scopus (https://www.elsevier.com/solutions/scopus)
Web of Science (https://clarivate.com/products/web-of-science)

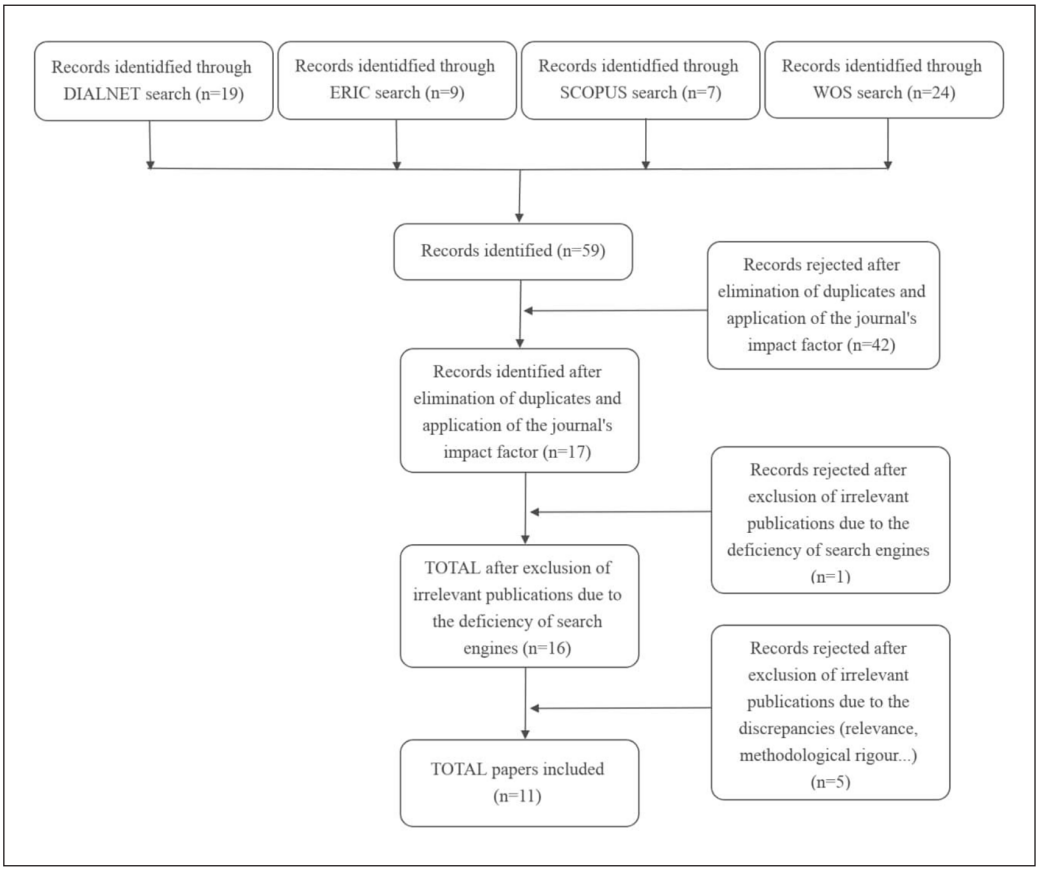

Figure 1. Flow chart showing the stages of the literature search.

The selection of articles began with eliminating duplicate documents obtained from the search.

To ensure the quality of the publications, the Scimago Journal Ranking (SJR) was checked, and journals that did not appear in this ranking were excluded. In addition, irrelevant articles provided by the databases were also excluded due to the limitations of their search tool. The initial search and selection process is summarized in Figure 1.

The selected articles were assigned an identification number from 1 to 16. Those referring to the same empirical study were treated as a single paper and were given a unique identification number.

Following the initial search and selection processes, we applied the criteria described in Table 1.

After reading the abstracts and reaching an agreement on the points on which there were discrepancies (e.g. relevance, methodological rigor), 11 publications met all the inclusion criteria. The full texts were made available to the research group for reading and analysis (see Appendix A in Table A1 for the complete list of the 11 articles). Following reading and analysis, a peer review was conducted to determine the following aspects:

Table 1. Study selection criteria.

Inclusion criteria	Exclusion criteria
Published in English and Spanish Published from 2017 to 2021 Appeared in SCImago Journal Ranking (SJR) Music education at any stage of education, from pre-school to higher education. Qualitative and quantitative research methodologies. Studies linked to innovative pedagogies in music education.	Non-empirical studies (e.g. books, opinions, conceptual works, didactic proposals). Studies that did not provide sufficient data to understand the educational experience. Pedagogy that was not innovative (items returned in searches using traditional strategies).

1. If convincing data were presented and rigorous methodology was followed (see Section 3.3).
2. If the article showed evidence of benefits for learning (cognitive, emotional, physical, or socio-affective).
3. If pedagogical strategies and educational interventions were well identified.
4. If they referred to and clearly presented the innovative pedagogical aspects.

Once we had identified the articles that presented features of pedagogical innovation in music education that met the required criteria, the next step was to determine the degree of innovation and disruption reported in each article. This was assessed according to the factors or elements of innovation in learning found in the literature (Burden et al., 2019) and shown in Figure 2. These four factors align with Law et al.'s (2005) six dimensions of innovation, as described in Table 2.

To maintain an approach to pedagogical innovation that is not overly focused on ICT, we decided to address the dimension of "Nature and sophistication of ICT use" by asking whether these pedagogical innovation strategies could be implemented without using ICT. In addition, our factors A and B capture the aspect of contextual modification or innovation where this dimension is analyzed.

After applying all the selection criteria and procedures, our initial analysis led us to identify five articles as the most disruptive. We then decided to apply the levels of innovation established by Burden et al. (2019) to identify those studies with the most and least disruptive elements according to the four factors mentioned above.

Each item was scored based on: the purpose of learning/activity, the context of learning, the relationship between teacher/students, and the role of the learner. A score was given from 1 to 3 (see scoring method described in Figure 2) for each factor. Since the final set of 11 articles were related to pedagogical innovation in music education, all articles scored at least one point on each factor. Therefore, the expected total score for each of the articles ranged from 4 to 12 points. With these total scores, it was possible to classify each study as Low innovation (between 4 and 6 total points); Medium innovation (between 7 and 9 total points), and High innovation or disruption (between 10 and 12 total points).

The first five papers identified a priori as the most disruptive were evaluated by discussing each of the factors after which these were scored by the three researchers. The scoring was the result of agreement and consensus. The remaining six were divided among the researchers for independent evaluation following the four-factor scoring procedure. A table of mean scores was then produced (See Table 3).

The quality of the review is based on the triangulation process at the time of document selection and analysis by three researchers. Discrepancies in selecting some papers were resolved by reading

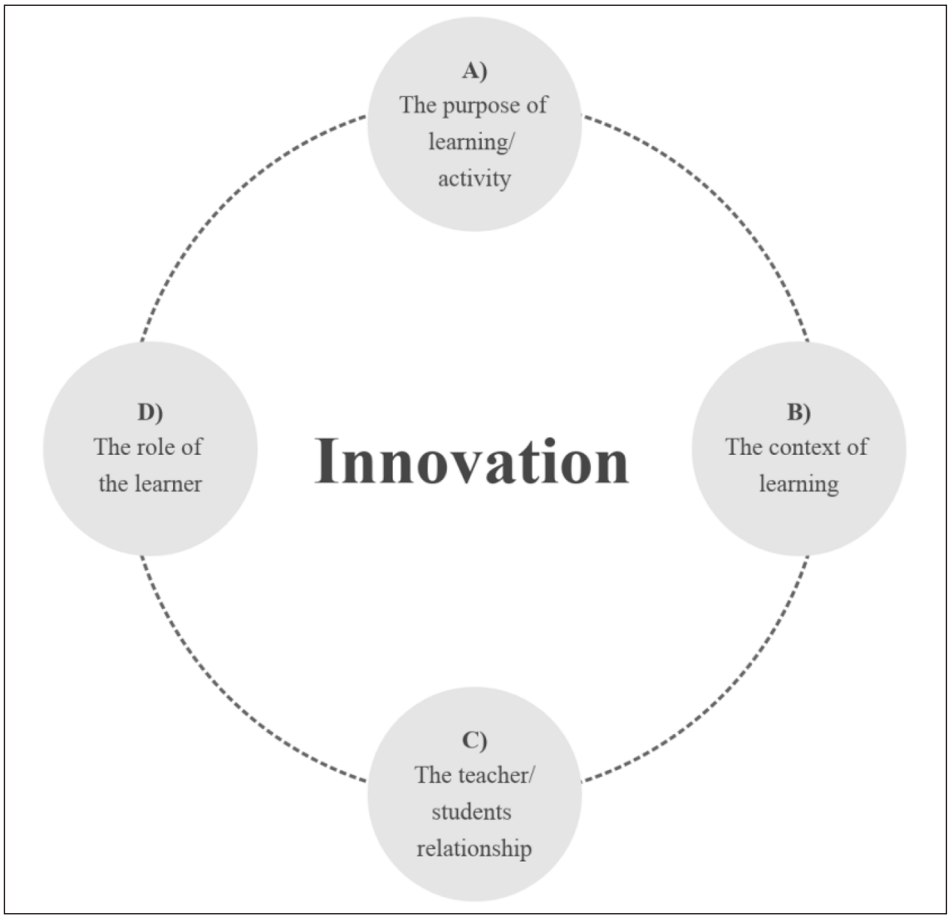

Figure 2. Elements of innovation in learning.
Note. The Figure 2 shows the innovation factors established by Burden et al. (2019), which we have used to analyze the articles: (a) in the learning purposes (curriculum, objectives, etc.) and nature of the activity (integration of technologies, relevance, etc.). (b) In the learning context (pedagogies applied, spaces, times, groupings, etc.). (c) Role of teachers concerning students (didactic, participation of community members in school life, etc.). (d) The role of the students in relation to the task (agency, service, passive, etc.,). Each factor is scored as follows: 1 point for low innovation, 2 points for medium innovation, and 3 points for high innovation.

Table 2. Relationship between the innovation dimensions of Law et al. (2005) and the study factors (Burden et al., 2019).

Law et al. (2005) dimensions of innovation	Relationship with innovation factors (Burden et al., 2019)
Intended curricular objectives of the innovative practices	A
Pedagogical role of teachers	C
Role of the student body	D
Nature and sophistication of ICT use	A
Multidimensional learning outcomes evidenced	A
Interconnections and interactions in the classroom	A and B

Table 3. Researchers' final scores on innovation.

Researchers (paper number)	Learning purposes/ activity	Context (space, time)	Students/ teachers relationship	Role of the learner (capacity for action)	Total
The three researchers (five papers: no. 5, 6, 9, 14, 15)	2.79	2.53	2.73	2.66	10.28
Researcher 1 (two papers: no. 1, 2)	2.5	2	2	2	7.5
Researcher 2 (two papers: no. 7, 10)	2.5	2	1.5	1.5	7.5
Researcher 3 (two papers: no. 11, 13)	1.5	2	1.5	2	7
Total means (of the 11 items)	2.32	2.13	1.93	2.04	8.07

the full article and discussing relevance or irrelevance in the research group meetings. In addition, two researchers external to the study reviewed the results to reduce selection bias.

Once the papers had been selected, a detailed individual evaluation of each article was carried out based on the following criteria:

- The quality of the journal according to SJR ranking
- Citation counts in Scopus and Google Scholar to assess the impact of the study
- A clearly described research methodology including specified objectives, research questions, data collection methods, analysis processes, and results.

Results

As noted above, following the selection and exclusion process, 11 articles were selected that met all the criteria set out in this study (see Appendix A). Therefore, the characteristics of the included studies are presented below.

Most of the experiences of innovation in music education are contextualized in Europe, as shown in Table 4. Exceptions are found in the USA (one article) and China (one article).

The contexts in which the experiences took place show the peculiarity of music education. All educational levels are included, from school music education, higher music studies, orchestral practices, or non-formal music studies. This contextual diversity is shown in Table 5.

Concerning innovation strategies, the majority use ICT as a means of pedagogical innovation. To a lesser extent, we can find other strategies where technological mediation is of little relevance. This trend toward innovation through technology, compared with other strategies, is reflected in Table 6.

Levels of disruption

As noted in the SLR design and methodology, each article received a score based on the final factors (see Figure 2).

The complete set of 11 papers showed some degree of innovation from all experiences by scoring at least 1 point on each criterion. Therefore, the expected total score for each paper ranged from 4 to 12. From these total scores, we were able to classify each article as follows: Low or sustained innovation, a total score of 4 to 6; Medium innovation, a total score of 7 to 9; and High innovation or disruption, a score of 10 to 12.

From the total scores (see Table 3), we were able to rank the papers, as shown in Table 7.

Table 4. Geographical distribution of papers.

Region	Number of papers
Europe	
Spain	6
UK	2
Belgium	1
MENU	
Oakland	1
China	
Harbin	1

Table 5. Contexts of application of the experiences.

Context	Number of papers
Primary Education/K-12	2
Secondary education	2
Music teacher training	4
Professional music conservatories	1
Non-formal/semi-formal music studies	1
Orchestra	1

Table 6. Innovation experiences.

Strategies	Number of papers
Use of ICTs	7
Gamification	1
Collaborative music creation	2
Collaborative teacher research	1

Table 7. Benchmark score on the innovation spectrum.

Low (two items) Sustainable innovation	Medium (four items)	High (five items) Disruptive innovation
Innovation: Is adapted from more effective but not radically changed practices. Adapts pedagogies to make them more effective. Item #: 7, 13	Innovation: Adds something new but does not alter the fundamentals of underlying approaches, structures, purposes, or practices. Item #: 1, 2, 10, 11	Innovation: Shifts the existing paradigm by creating new purposes and altering the fundamentals of approaches, practices, teacher/student ratios, and the nature of the curriculum. Item #: 5, 6, 9, 14, 15

In the analysis of papers with low innovation, each of the four factors never exceeded a score of 2, and all scored 1 on at least two criteria.

Three of the six papers that belonged to this category had a high innovation score on at least one factor, all three of them being the learning/activity purpose.

The two papers classified as highly innovative scored three on three of the four factors.

As expected, the average score of the five papers initially selected as most disruptive was higher than that of the remaining six. After analyzing the results of the independent evaluations, those that generated the most disagreement were discussed again to unify the perceptions for each of the factors that produced controversy. Researchers 1 and 2 agreed to review the items again, paying particular attention to the those with a significant difference in scores. The result was a revised set that had a higher level of agreement.

Pedagogical innovation in music education

This SLR reports evidence-based texts on the nature of innovation in music education and how it occurs in practice. Various strategies have been tested including ICT, Gamification, Collaborative Music Making, and Collaborative Teaching Research in grounded experimental research. Strict inclusion criteria allowed us to avoid anecdotal experiences that have not followed rigorous methodology.

Next in this section, the continuum of innovation is presented with an analysis of the different articles according to the characteristics addressed by each one and the factors that are most likely to be transformed based on the scores received. These results show a sample of what music teachers emphasize when they intend to innovate in their classrooms.

We will then proceed to a global analysis of the three levels that comprise the innovation spectrum in the articles analyzed (radical innovation, medium innovation, and sustained innovation) with a section for each level illustrating how the different innovation factors have materialized in each of the articles classified.

The "continuum" of pedagogical innovation in music education

We reiterate that the 11 articles included in this SLR explore innovation practices in music education that offer evidence of an impact on teaching and learning. The data reveal that the application of ICT for learners at all levels of education can lead to new and valuable learning methods in formal, informal, and non-formal contexts (e.g. articles 1, 2, 7, 9, 10, 11, and 13). As we have seen, not only does innovation come from technological integration, but we can also find practices derived from the gamification of the learning context (e.g. article 5), collaborative work for music creation (e.g. articles 6 and 15), and collaborative research processes (e.g. article 14), all of which are concerned with pedagogical transformation toward more participatory, collaborative, creative and reflective models that can be disruptive of traditional pedagogies.

The analysis of the scores conducted by the researchers (see Table 3) reveals that the most significant aspect of innovation in these studies was the learning purposes/activity (mean score = 2.32 out of 3 for this factor). In most cases, the originality of the adapted activity and learning purposes does not lead to a transformation of the other factors. Despite the few studies mentioned that focus on the organization of space and time within the classroom, this is one of the aspects that is modified (mean score = 2.13 out of 3) in innovative practices in music education, perhaps due to the integration of new virtual spaces. Furthermore, the capacity for action and decision-making occupies an important place in the studies (mean score = 2.04). Nonetheless, the integration of resources that require the development of skills means that the difficulties of handling technology determine this freedom of the pupils. In last place is teacher-student relations (1.93 out of 3) because these roles do not undergo a significant disruption. There is a lack of research focused on this change of roles, where the teacher is placed in a different position from usual and where other actors such as family members and external artists are included.

In the following subsections, we categorize innovative practices to represent the high, medium, and low spectrum according to the four factors used to classify each work (i.e. learning/activity purposes, context, learner/teacher ratio, action/decision-making).

Radical disruptions: high on the innovation spectrum

According to the group of researchers, 5 of the 11 articles (no. 5, 6, 9, 14, 15) reported innovative pedagogical practices in music education that could be disruptive to traditional models (see Table 7). In all papers, students undertake unusual and original tasks. Creative, collaborative, and reflective participation figure centrally in the five works classified as highly innovative. With this approach, contexts are transformed or extended with various resources that may be technological (or otherwise), while new forms of relationship are also established between teachers and students in a flexible, democratic, horizontal, and co-construction model of knowledge.

Furthermore, another essential factor is participation and decision-making within the community and the self-regulation of learning, along with the autonomy that students are afforded in their involvement in the task concerning time, space, and resources. This allows for a radical transformation in acting and making decisions that goes beyond models that are excessively influenced and guided by the work of teachers. The disciplinary guidelines are based on broad freedom of action; the students have the power of opinion and decision-making regarding the topics of the projects and the learning objectives, which favors a high degree of autonomy and involvement in the task.

In Carrión-Candel (2019), a Higher Education experience, the learning objectives were achieved by transferring the more theoretical aspects of musical language to a gamified environment and a digitally extended context. The teacher proposes tools, and the students choose which ones to use to work autonomously.

In the collective musical creation in Higher Education in teacher training reported in Ocaña-Fernández et al. (2020), the creative activity is experimentally developed so that music emerges even if the students have no previous musical training. Despite taking place in a classroom context, the use of other spaces outside the classroom and resources is encouraged. The pupils' relationship with the teaching staff is diluted so that the teacher disappears until guidance is requested.

Murillo-Ribes et al. (2018) also report on experiences of collaborative creation at University but through mobile devices or tablets that control the *Soundcool* software and increase performative possibilities. Space is expanded, which opens the possibility of working remotely at any time and in any place. The system presents certain complexities that need to be learned, but once these are overcome, the teaching action disappears. The action of the students and their decision-making is critical in determining the development of the activity.

In the experience in Higher Education described in Hogle and Bramble (2020), the purposes transcend the educational act itself, as the aim is to co-create new spaces of interest for music education. The digital context of dialog diaries and meetings facilitates the methodological process. The student-teacher relationships are based on a community that shares interests, dialogs, and investigates to transform the members' own identities. And the students' capacity for decision-making and action is equal to that of the teaching staff in a community relationship that is respectful and has the aim of mutual empowerment.

MacDonald et al. (2021) present a disruptive experience in non-formal music studies motivated by the limitations derived from the Sars-Covid-2 pandemic. The activity is based on collective free improvisation, without being restricted by any genre, to encourage the participation of any person regardless of previous musical training and experience. The context is innovative due to social isolation and non-presence. This is so innovative and recurrent that it has been named *zoomsphere* because of the video call platform where it takes place. The relationships are horizontal and

spontaneous, and during the sessions, improvisations in jazz scales coexisted with other free improvisations and conventional instruments were combined with domestic objects that emitted sounds, along with plastic and visual arts. The ability to act and decide is free, as there is no requirement to participate.

Mid-Innovation: in the middle of the innovation spectrum

Four of the eleven articles were classified as medium innovation processes within the spectrum of innovation in music education as indicated by our SLR (see Table 7). Three of these obtained a maximum score in at least one of the factors (see items no. 2, 10, 11). However, this high score is isolated as most of the papers in this category have an average score of 2 points for all criteria. In general, none of the works in this category appeared to be sufficiently disruptive to transform established pedagogical structures, practices, and foundations.

The experience presented in Nijs (2018) consisted of creating a digital painting with music being played and with movement. This is possible by means of sensors that detect the sound parameters and the pressure exerted on a carpet with the feet. This innovative context is limited by space and time. The activity is developed in different phases with parameters set a priori by the teaching staff without the possibility of changing the work methodologically. The students' capacity for action and decision-making is considerable as long as it is adjusted to those methodological phases. There is an invitation to explore beyond a traditional performance of the score and thus there is an express request for transgression within the rigidity of the process.

Solis (2019) presents a project in Primary Education that uses unconventional resources such as DJ stations to experiment with sound. The context is the classroom itself, together with technological resources and group work. The relationship between the teacher and the students has a hierarchical structure since basic knowledge is necessary to handle the technological resources. However, from the outset, priority is given to autonomous exploration, and the activity is simplified, so that dependence on the teacher's knowledge is kept to a minimum. Moreover, the teacher accepts reciprocal teaching when their students act critically on the musical results. The experience begins with action and trial and error but is conditioned by the curriculum programmed by the teacher and by the limitations of complex technology, even though the center has sufficient DJ stations, headphones, and computers for all the pupils to work in pairs.

In López-Belmonte et al. (2019), communication and the expression of emotions in musical and corporal activity are worked on with a robotics device called *Makey Makey* in Secondary Education. The context is the classroom itself since technological resources are required. This also creates a dependence of the pupils on the organization of the activity by the teachers. Therefore, the student's capacity for action and decision-making is also determined by these limitations. The device is simple to use as it does not require programming knowledge, although such knowledge would increase the possibilities of action.

The experience for Primary Education described in Li (2020) uses the *Band in a Box* software to harmonically accompany singing in a classroom context. Learning how to use the software is necessary, and once learned, the teacher's presence is needed to be able to practice. The ability to act and make decisions is limited to the use of the software, since the teacher is responsible for selecting the repertoire.

Sustained innovations: Low on the innovation spectrum

Two of the eleven articles were classified as being of low innovation. These were selected because they reported innovative experiences, but these works received the lowest score (1) in at least two of

the innovation factors (see items no. 7 and 13). Specifically, a score of 1 was obtained in the student-teacher relationship and action/decision-making categories. The type of innovation is considered to be sustained. Although the degree of disruption is low, there are some truly innovative aspects. Thus, the learning activity/proposal category has a high average score compared to the other categories.

The experience presented in Martínez-Cantero (2017) of innovation in a professional music conservatory is limited to creating a digital space in blog format to unify content necessary for higher music studies. The context is broadened by using this digital space. The contents of the blog are selected by the teaching staff according to the official curriculum and the needs they have identified during the classes. The pupils' capacity for action and decision-making is limited to searching the blog according to their needs, contributing some proposals for inclusion, and making some comments.

Finally, the work in Secondary Education described in Calderón et al. (2017) includes some innovative learning purposes through interdisciplinarity. The context is broadened with the use of digital resources. However, the complexity of handling some of these programs without prior knowledge means that students are highly dependent on the teacher, thus reducing their autonomy in terms of their capacity for action and decision-making.

Discussion and conclusions

As illustrated in the previous section, the experiences that we analyzed we place at the lower end of the spectrum result from innovation initiatives that do not introduce major changes and not particularly risky because they only slightly modify established practices. Thus, although we cannot generalize through our study, it can be deduced from the selected articles that disruptive music education might have had an upward trend in recent years despite the restrictive elements of regulated studies such as objective assessment tests, rigid schedules, limited spaces, and outdated curricula (Díaz-Millón et al., 2020). Although relatively few examples reflect the emergence of the pandemic, these can drive a forced transformation in the ways music is taught, learned, and practiced. Moreover, many of the disruptive practices in place before the pandemic may be disrupted and need to be revised (Iglesias-Vidal et al., 2020). The fact that in the last 5 years only 11 articles have been published in impact journals could be due to that most teachers who innovate do not carry out systematic studies on these practices and much less publish them. Borg (2003) says that most of the experiences remain invisible due to the methodological rigor required by scientific journals. So, we can offer two main suggestions to teachers: (1) that rigorous research is carried out to provide visibility in this scientific field, and (2) that the recording and dissemination in various media be encouraged so that it is acknowledged and can be the subject of more rigorous investigation by the scientific community. This could be a way for real practice in schools and training centers to feed scientific knowledge.

In terms of possible innovation experiences, we encourage experimenting with progressive transformations in terms of the four factors we have evaluated in this study (Burden et al., 2019). It may be difficult to influence some of these, but with solid structuring and design of the activities, it should be possible to create flexible, specific, and highly educational methods centered around student autonomy and self-regulation. Likewise, we should emphasize the importance of these disruptive educational practices of an integral, expanded, and ubiquitous type that are designed to consider the connection of people, places, times, and all available resources in a complex and interdisciplinary strategy (Valverde-Berrocoso, 2018).

The technological advances of this first quarter of the century have meant that pedagogical innovation in music education has been led by ICT integration (Lorenzo-Quiles et al., 2015). Researchers have followed this trend, and scientific production has been abundant in this area (Botella-Nicolás et al., 2019; García-Gil & Cremades-Andreu, 2019; Parra & Gutiérrez, 2017) and

it is somewhat uncommon to find forms of innovation with less interest in technology (Minors et al., 2017; Vass, 2019). In this curricular integration of ICT with music education, teachers are considering new methodological models regarding how and what to teach, new ways of grouping students, and the roles that both must assume in order to orient themselves toward new ways of making and experiencing music where technologies become a tool for musical exploration (Finney & Burnard, 2009; Martin, 2012; Savage, 2007).

Therefore, we can conclude that in the analyzed studies innovation in music education is a multi-faceted concept applied in different ways. We can find disruptive experiences that use various learning strategies depending on whether they emphasize ICT, gamification, interdisciplinarity, or collaboration. However, one element that acts as a common thread in most of them is the development of artistic creation processes. Also significant is the large number of articles that did not meet the selection and inclusion criteria. There are interesting experiences that we have had to exclude because they did not follow a rigorous methodology for their study and left fundamental aspects unclear. Eleven is a very low number of articles, so we cannot speak in general terms about the innovation trends that are developing around the world, but we think that we provide a good example about how to do a SLR explain the methodological process and the thematic analysis on the samples obtained.

Overall, our SLR uncovers how pedagogical innovation (technology-based and non-technology-based) can stimulate learning in music education. The results are aligned with the approach of Eisner (2018), who states that "arts education models must be in line with the conception of art at each moment" (p. 11) and with the new learning ecologies (Martínez-Rodríguez et al., 2018) that analyze the educational experience from the confluence of all the contexts where learning takes place—political, cultural, social, emotional—acquiring a more social, community, participatory, reflexive, and interactive vision. The disruptive experiences analyzed point in this direction, so it may be useful to consider the elements that characterize them for the design of proposals that address the social reality of the classroom.

Limitations

There are some limitations to the methodological process we used to select the papers. For example, the search equation may not be complete enough to retrieve documents on all the topics of interest. Similarly, limiting the search to the last 5 years means that we may have overlooked experiences that today might be considered innovative or disruptive. We have also probably excluded texts with significant experiences because they had not been published in the journals that met our selection and inclusion criteria. However, despite only including 11 academic works in our final selection, we have provided useful information about innovation in music education.

We are aware that interpretations of what is innovative and disruptive depend on each person's beliefs, perceptions, and education paradigm. But we believe that the initial analysis of the literature, the procedures used during the process, and the meetings to discuss and reach consensus have ensured that the evaluation of the articles has been approached with rigor and honesty. Although we recognize the subjectivity of the opinions in a process that has included limited external voices, we accept and assimilate them as an added source of value in qualitative research because these can initiate new discussions on these issues.

Future studies

The results presented seem to show that innovative practices can bring some value to educational practices, and we therefore consider that one future perspective of study should focus on expanding

the type of strategies applied in the classroom. This is feasible despite the restrictions imposed by the regulations governing the official curricula in Spain. To this end, the *Nomadis R&D Project* will explore innovative experiences beyond those published in scientific journals, as these are not the most common way for teachers to share what they are doing in their classrooms. In order to delve deeper into the selected works, it would be interesting to incorporate the perspective of the students and other actors in the educational community regarding their perceptions, interests, and criticisms of the practices carried out.

Another line of research could be to focus on what teachers understand by innovation and disruptive music education. Unfortunately, the lack of agreement in the conceptualization of these terms makes these studies highly heterogenous due to the polysemic character of pedagogical discourses when referring to these topics. It will also be interesting to learn how the COVID-19 pandemic has affected teachers, how it has forced many teachers to be disruptive in their ways of working, and how they have adapted to this new reality.

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Note

1. The following search equation was used and adapted to the requirements of the various databases: (creat*) AND (Innova*) AND ((“music education”) OR (“educación musical”)) OR ((“musical pedagogies”) OR (“pedagogía musical”)).

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Appendix A: Items included

Table A1. List of 11 papers finally included (using the numbering of the original 16 articles).

Paper #	References
1	Nijs, L. (2018). Dalcroze meets technology: Integrating music, movement and visuals with the Music Paint Machine. *Music Education Research, 20*(2), 163–183. https://doi.org/10.1080/14613808.2017.1312323
2	Solis, J. (2019). DJ pedagogy in the childhood experience. *Childhood Education, 95*(5), 16–23. https://doi.org/10.1080/00094056.2019.1663092
5	Carrión-Candel, E. (2019). The use of the game and the cooperative methodology in higher education: An alternative for creative teaching. *Artseduca, 23*, 70–97. https://doi.org/10.6035/Artseduca.2019.23.4
6	Ocaña-Fernández, A., Montes-Rodríguez, R., & Reyes-López, M. L. (2020). Creación musical colectiva: Análisis de prácticas pedagógicas disruptivas en Educación Superior. *Revista Electrónica Complutense de Investigación en Educación Musical - RECIEM, 17*, 3–12. https://doi.org/10.5209/reciem.67172
7	Martínez-Cantero, I. (2017). La educación musical donde no llegan las palabras. Implementación de un blog colaborativo como herramienta en las asignaturas grupales de conservatorio. *Artseduca, 16*, 70–91.
9	Murillo-Ribes, A., Riaño-Galán, M. E., & Berbel-Gómez, N. (2018). Percepción sobre el uso de "Soundcool" como herramienta tecnológica en los procesos colaborativos de creación sonora. Un estudio exploratorio en la formación inicial del profesorado. *Psychology, Society & Education, 10*(1), 127–146.
10	López-Belmonte, J., Pozo-Sánchez, S., Vicente-Bújez, M., & Díaz-Mohedo, M. T. (2019). Robotic tools for the dynamization of new educational spaces. *Campus Virtuales, 8*(1), 63–73.
11	Li, Y. (2020). Application of computer-based auto accompaniment in music education. *International Journal of Emerging Technologies in Learning, 15*(6), 140–151. https://doi.org/10.3991/ijet.v15i06.13333
13	Calderón, D., Piñol, C. M., & Carnicer, J. G. (2017). Las tecnologías: Un recurso interdisciplinar en la educación artística en Secundaria. *Artseduca, 18*, 200–211.
14	Hogle, L., & Bramble, C. (2020). Teacher agency through duoethnography: Pedagogical DNA in a community of learner-teachers. *International Journal of Education and the Arts, 21*(15), 15. https://doi.org/10.26209/ijea21n15
15	MacDonald, R., Burke, R., De Nora, T., Sappho-Donohue, M., & Birrell, R. (2021). Our virtual tribe: Sustaining and enhancing community via online music improvisation. *Frontiers in Psychology, 11*, 623640. https://doi.org/10.3389/fpsyg.2020.623640

Appendix B: Search terms

Table B1. Synonyms and alternative terms to the main key terms.

Innovation	Creativity	Music Education
Innova* (innovative, innovación. . .) Pedagogical innovation	Creat* (creativity, creation, creative, creator, creatividad . . .)	Musical pedagogies Educación musical Pedagogía musical Music teach* (music teaching, music teacher. . .)