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Choral music teaching and the use of a Learning Management System in aspects of self-regulation

O ensino de música coral e a utilização de um Sistema de Gestão de Aprendizagem nos aspectos de autorregulação

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Abstract

This work aims to address aspects of choral music teaching through a Learning Management System (LMS) based on the principles of self-regulation. Self-regulation is a concept that involves elements related to motivational beliefs and the students' learning process. A survey was carried out in order to describe resources and activities that could be applied in LMS environments considering choral music and self-regulated learning. As a result, it is expected that the use of LMS in choral singing from the concepts of self-regulation of learning may contribute to the development and motivation of choristers. This study may contribute to music education in different areas from the point of view of using online learning environments that are used in a hybrid way.

Keywords: choral music, self-regulation, Learning Management System.

Resumo

Este trabalho tem como objetivo abordar aspectos do ensino da música coral através de um Sistema de Gestão de Aprendizagem baseado nos princípios da autorregulação. A autorregulação é um conceito que envolve elementos relacionados às crenças motivacionais e ao processo de aprendizagem dos estudantes. Foi realizado um levantamento com o intuito de descrever recursos e atividades que poderiam ser aplicados em ambientes online considerando a música coral e aprendizagem autorregulada. Como resultado, espera-se que a utilização do Sistema de Gestão de Aprendizagem no canto coral a partir dos conceitos de autorregulação possa contribuir com o desenvolvimento e a motivação dos coristas. Este estudo pode contribuir com a educação musical em diferentes áreas do ponto de vista da utilização de ambientes online que são empregados de forma híbrida.

Palavras-chave: música coral, autorregulação, Sistema de Gestão de Aprendizagem.

Introduction

This work is an extension of the paper published in the Book of Proceedings of CIVAE 2023 and it aims to address aspects of choral music teaching through an online learning environment in aspects of self-regulation.

Individuals who voluntarily participate in choirs may not have had contact or prior training with musical elements, such as: rhythm, intervals, harmony, vocal control, as well as may have some issues related to their studies, such as difficulty in organizing time, outlining goals, procrastination and lack of motivation.

The coronavirus pandemic has strongly affected teaching practices in different areas of music, including choral singing. The conductors needed to find ways to keep their choirs functioning and in this sense the Internet and digital platforms were resources used to practice rehearsals, among other musical and social activities.

Considering this scenario and starting from a previous master's study with a music teaching platform applied to adults choral singing, a doctoral research was structured with the objective to investigate how an online learning environment designed specifically for choral singing could be used based on the principles of Social Cognitive Theory (Bandura, 1978).

The chorister and the self-regulation of learning

Digital platforms can be explored in different ways in order to provide different musical study opportunities for choristers. In addition to face-to-face rehearsals, an online learning environment could be used by the conductor in a hybrid way to encourage the singers to study during the week, as well as to expand the possibilities of contact with music.

Linder (2017, p.12) indicates that "hybrid education is an additional way that instructors can ensure that students are engaged with the course content by incorporating online learning communities, synchronous and asynchronous discussion, and a variety of online collaboration methods". This type of approach can promote the singer's interactions with their peers, as well as with the conductor creating different possibilities for musical learning. Taking into account the possibilities of hybrid teaching in the practice of choral singing in online learning environments, this chapter aims to take a survey and present resources that could be used in the musical education of a choir from the perspective of self-regulated learning.

Social Cognitive Theory assumes that individuals can be agent of their own development by acting proactively (Schunk, 2012). However, in aspects involving learning, especially the hability of learning contents and carrying out specific tasks, there are factors such as low efficacy, difficulty setting goals, disorganization, tendency to procrastinate, distractions, lack of motivation, among others that could lead the choir singers not to complete their music studies satisfactorily.

Self-regulation is a concept that involves individuals' thoughts, feelings and actions to achieve their goals and that are systematically adapted as they affect learning and motivation (Schunk, 2012; Schunk & Ertmer, 2000). The cyclical model of self-regulation of learning developed by Zimmerman (2000) was elaborated from the concept of triadic reciprocity that supposes the interactions of the individual with his behavior and with the environment. Beyond that, Zimmerman's cyclic model of self-regulation considers students' motivational beliefs and learning processes, as well as establishing three self-regulatory phases: forethought, performance, and self-reflection (Zimmerman, 2013).

The forethought phase occurs before the action and encompasses task analysis and self-motivational beliefs.Task analysis involves setting objectives and planning strategies. Zimmerman & Schunk (2004) state that specific and challenging goals are related to greater learning and motivation, as well as setting goals and planning strategies are linked to motivational beliefs, such as self-efficacy, expectation of results, intrinsic interest and goal orientation.

In the performance phase there are two categories which are self-control and self-observation. Self-control involves aspects of self-instruction, focus of attention, use of images, development of strategies, structuring of the study environment and seeking help from the teacher or colleagues (Zimmerman, 2013).

Self-observation includes metacognitive monitoring and self-recording. According to Barenberg and Dutke (2019, p. 269) the metacognitive monitoring is "the relationship between actual learning and the subjective perception of the learning process or outcome and is generally seen as a prerequisite of self-regulated learning". A self-recording activity can be carried out to document the learning process and the results achieved. This practice can contribute to increase self-control due to increase reliability and specificity of self-observations (Zimmerman, 2013). Zimmerman & Schunk (2004) note that students with self-control who are proactive observe the execution of their processes, as well as their results, in a more structured way than students who are reactive.

The self-reflection phase follows the performance phase and incorporates self-judgment and self-reaction processes. Self-judgment is composed of self-assessments and attribution of causality in relation to results obtained in learning. Proactive students elaborate their self-judgment processes based on causal attributions, which is why they usually attribute errors to the use of inefficient strategies, which is called controllable causes. However, reactive learners are more likely to attribute their mistakes to lack of skill, which can be understood as an uncontrollable cause. Self-reaction involves self-satisfaction and adaptive or defensive inferences. Reactions are linked to perceptions of satisfaction or dissatisfaction related to the individual´s performance, as well as conclusions about the need to change strategies in the learning process. The phases and subprocesses of self-regulation are performed cyclically during the learning process (Zimmerman, 2013).

Learning Managment System

Currently, there are several types of platforms that can be used for educational purposes. According to Cavus (2015, p. 873) a LMS "provides the virtual platform for the e-learning by enabling the management, monitoring student, delivery, tracking of learning, testing, communication, registration process and scheduling". In general, an LMS has characteristics such as the integration of multiple media resources, the use of alternative technologies, interactive applications, among others (Oliveira, Cunha & Nakayama, 2016; Cavus, 2015).

On issues of software ownership, partnership, and licensing, Blackboard, Desire2Learn (D2L), Docebo, and efront Pro LMS are paid platforms. The LMS Modular Object-Oriented Dynamic Learning Environment (Moodle), Canvas, Sakai, ATutor and Claroline are free environments (Zarouk, Restivo & Khaldi, 2018). The choice of platform to be used depends on factors such as licenses and partnerships established with the institutions, though, as LMS Moodle is an open source environment that has been widely used in schools and universities and it has a community of developers, educators and administrators around the world, some features of this platform will be mentioned in this chapter.

There is a difference between the terms Moodle resource and Moodle activity. The Moodle resource is static and can be added as a video, file or link. The Moodle activity is a feature that allows interactions between students. Examples of activity tools are the quiz, the wiki and the fórum (Nash, 2018). This is a point to be considered in the organization and planning of the contents and activities that will be delivered to the students, bearing in mind possible aspects of collaboration and communication that the activities allow.

Additionally to the resources that are used asynchronously, there is the possibility of carrying out synchronous activities through web conferencing tools built into the LMS or added through a plugin such as BigBlueButton and in an integrated manner with other platforms, such as the G suite education, which makes available Google Meet or the Zoom platform. With this resource, it is possible to add participants to a meeting, record a class and share content.

Considering the diversity of existing equipment, such as smartphones, laptops, ipads and tablets that can be used by students, the concept of responsiveness on websites and LMS allows content to be accessed in a way that is adapted to the screen size of each device. In this sense, it is interesting to note that most LMS offer access via mobile devices.

In order to analyze student engagement in activities proposed in the online environment, there are learning analytics tools. A definition on this topic that has been adopted by researchers is pointed out by Clow (2013, p. 685) as "the measurement, collection, analysis and reporting of data about learners and their contexts, for purposes of understanding and optimising learning and the environments in which it occurs".

As the content of the environment is aimed at choral singing, in addition to the structure provided by the LMS, it is necessary to integrate specific programs in the musical area, such as audio editor, video sharing service, music notation software, auditory training software, among others. These features can be incorporated into the LMS based on the concept of software ecosystem, which for Manikas (2016, p. 96) is defined as "the software and actor interaction in relation to a common technological infrastructure, that results in a set of contributions and influences directly or indirectly the ecosystem".

Resources of LMS in choral music teaching in aspects of self-regulation

The self-regulated model of learning indicates that students need to define their goals, control the performance of their activities and reflect on the learning process in a cyclical way. In the forethought phase, with the aim of assisting the choir singers in planning their activities in the online environment, the choir conductor could propose tools, such as the Google G Suite calendar and spreadsheet, as well as the Trello application, which is a software that allows the organization of tasks through a panel that points out the tasks completed, those that are in progress and future activities. In the task forethought stage, Usher and Schunk (2018) show that the teacher can encourage students to set their own goals and that this action tends to lead them to be more self-regulated.

After outlining the goals and strategies to be used in learning, the student will go to the performance phase. Music education through choral singing can include activities that address the aspects in which the chorister can respond, perform and create music (Bauer, 2014).

In the performance phase, different resources of the LMS can be used to provide choristers with the possibility of responding to the music. In order to establish the organization of the choral repertoire, the conductor can use folders to store the audios, videos, lyrics, scores and materials relevant to choral singing, associated with resources such as tasks and the availability of content in e-book format. Spotify and YouTube platforms, for example, are technologies that allow the sharing of audios and videos that could serve as a reference to the choir.

Bauer (2014) suggests some digital technologies that could be applied in music response activities. Activities include guided listening that can be done with presentation or word processing software, concept mapping, and music notation software, listening, description, discussion and reflection on music using audio and video recordings, websites, discussion forums, blogs and podcasts. Moreover, to activities with more descriptive aspects, the author indicates possibilities of tasks with musical analysis and evaluation proposals (Bauer, 2014, pp. 122-123).

Choral singing practice assumes that the chorister sings in tune, at the correct beat and with the appropriate vocal control. Furthermore, musical practice involves cognitive, auditory perception, affective and motivational aspects. In learning concepts that must be incorporated into the choir singer's performance, there is the principle of modeling, which according to Schunk (2012) can be understood as the process of observing a model, which in this case would be the conductor, with the purpose of exemplifying certain content to be learned.

Based on the modeling concept, Bauer (2014) proposes possible activities related to performing music in aspects of singing practice, such as: singing with musical accompaniment software to help maintain steady beat, singing with appropriate breathing and posture, singing with expression of correct dynamics, phrasing and style. In the mentioned activities, audio and video recorders, mobile applications, digital musical instruments, musical perception software, musical notation and websites can be used. These music programs can be incorporated into LMS assignments, lessons, quizzes and forums according to the conductor's planning.

Another resource that could be used in the performance phase is karaoke. There are websites, mobile applications and YouTube channels that allow you to choose songs of different styles and that have subtitles. Bauer and Mito (2017) state that the possibility of choosing the repertoire is a favorable point and they suggest that karaoke has become popular because individuals can sing the repertoire they are listening to in a very varied way.

In addition to possibilities related to musical response and performance, the conductor can encourage choristers to develop tasks that involve musical creation. Bauer (2014, p. 68-71) suggests improvisation and composition activities that can be applied through digital technologies. In improvisation activities, the chorister could sing freely or from a musical idea generated by the conductor whose objective was the improvisation of a tonal or rhythmic pattern by the chorister and the performance of a familiar melody sung by ear including variations of melody or rhythm. In composition activities, the resource of creating an ostinato can be applied, using non-traditional sounds to create music, creating a remix, composing from question and answer phrases, as well as the use of repetition and contrast. In musical creative activities, audio recorders, auto-accompaniment software, digital instruments and mobile applications can be used (Bauer, 2014).

Merrick (2017) points out that composition activities can be fostered through social media and collaboration. Furthermore, digital technologies allow access to many sheet music and accompanying recordings, as well as enabling the chorister to watch different

compositional performances. The collaborative online environment can facilitate the sharing of mutual feedback between students and personalized feedback from the conductor to the chorister.

Although to respond, to perform and to create activities can be approached individually, Bauer (2014) recalls that in most music classes or rehearsals there are times when students will be involved with the actions of responding, performing and creating music simultaneously. Considering the performance self-regulatory phase, it is important to note that the conductor could motivate the choristers regarding the categories of self-control and self-observation established by Zimmerman (2013) encouraging choristers to develop effective strategies and monitor their musical learning.

The LMS allows the development of tasks individually, however, some activities can be built collectively. One of the resources of collective activities is the wiki. Nash (2018) indicates that the wiki allows contributions on a particular topic or a set of topics, in which students can enter and edit different contents. During the musical performance process, the wiki can be used to build collective activities that develop auditory perception.

Schafer (1991) shows that in musical development, the stimulation of auditory perception is an essential element. On the wiki, activities could be proposed that would encourage the auditory perception of acoustic elements present in everyday sounds based on the concept of soundscape proposed by Schafer (2001), which defines the hi-fi soundscape that represents an environment with a low level of noise, such as countryside sounds, and the lo-fi landscape that represents a place with high noise levels, such as the sounds of a large city. In this context, choristers could be encouraged to perceive the soundscape of their work environments, school, church, among others. Another activity could be the exploration of the sounds of music and choirs from different cultures with the aim of expanding the auditory perception and the musical knowledge of the chorist (Schafer, 2001).

As well as the wiki, the forum tool could be an interesting resource for sharing the choristers' activities. Another resource that can be implemented in the musical performance process is the glossary. The choristers could be guided to research a certain subject and insert collectively constructed definitions about musical terms related to choral singing, composers, periods of music history, among others.

In view of the reflection phase, after carrying out the activities, the choristers could register in the diary tool their perceptions about the progress of the activities, as well as the facilities and difficulties encountered in carrying out specific tasks. This moment of reflection should be encouraged by the conductor so that the chorister understands if there is a need to change any strategy used in a given exercise and readjust the study plan, if necessary.

Considering aspects related to reflection, after carrying out performance activities involving audio or video recordings made individually or collectively, the conductor could suggest that the chorister reflects on certain items such as tuning, timbre, vocal control, rhythm, facial expression, among others, and write down their individual and collective perceptions in the diary. Bauer (2010) points out that after using an audio editor in the

musical performance process, students can evaluate and reflect on the content produced. Another reflection format, according to Bauer (2014) would be the posting of an audio or video asynchronously in the online environment and the possibility of individual and collective comments and reflections on certain items of the video.

Conclusion

In this chapter we have demonstrated the results of a survey aimed to describe resources and activities in a Learning Management System applied to choral singing in aspects of self-regulation of learning.

First, we have presented the possibilities of applying the online environment for weekly practices using hybrid, in person or at a distance, format. Then, it was pointed out some definitions present in the Social Cognitive Theory, notably in the concept of self-regulation of learning. The self-regulation model occurs cyclically in three phases: forethought, performance, and self-reflection. These involve aspects of students' motivational beliefs, thoughts and learning process.

After, we have listed some LMS examples and described features that can be used asynchronously as a resource or as an activity in the environment. We have also shown resources that can be used synchronously. Furthermore, we have considered the concept of ecosystem, in the sense of incorporating services and programs specific to the musical area into the environment.

Finally, we have indicated some activities from the point of view of the cyclical model of self-regulation of learning. In the forethought phase, we have presented tasks that could contribute to studies organization and planning. In the performance phase, we have considered activities that could be applied in the aspects of responding, performing and creating music. In this sense, some musical activities can be proposed individually and others can be developed collectively. In the reflection phase, activities emphasize recording, reflections and adjustments of strategies.

The activities carried out by choristers in the online environment could contribute to improving auditory perception, vocal control, and musical knowledge. As a result, it is expected that the use of LMS in choral singing, from the concepts of self-regulation of learning, may contribute to the development and motivation of choristers. From the point of view of using online learning environments in a hybrid format, this study may contribute to music education in different areas.

Acknowledgments

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