

# In the Era of Computers, Internet and Multimedia, are we still Teaching Composers to become Chapel-Masters?

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**Abstract:** The ongoing paradigm shift from traditional methods of teaching music composition towards new approaches based on computer technology for sound production is the main focus of the article. The paper reviews the evolution of teaching methods throughout the Classical, Romantic and Modern periods, demonstrating how certain standard practices from former ages, based on the professional profile of the Chapel-Master, become theoretical golden principles for subsequent periods. After the French Revolution the traditional method of individual practical exchange between master and disciple was upgraded at the Conservatory. Classes for groups of students required a new approach based on theory abstraction. Although none of these teaching methods have been abandoned up today, a new paradigm appears when the tools of computer technology became widespread. An unpredictable equilibrium between the traditional methods and the new techniques of computer-assisted or computer-generated music composition tends to emerge.

**Keywords:** Composition teaching methods; Chapel-Master profile; Partimenti; Music theory; Computer-generated music.

**D**uring the many years I worked as a teacher at Brazilian Universities, I have witnessed a progressive decline of student interest in the career of a musical composer. However, based on the small size of my sample against the thousands of composition programs around the world, probably my experience is not representative enough to draw any general conclusion from it. Nevertheless, I guess that this phenomenon may indeed happen in other places, as I have realized when I travel as a guest lecturer.

Maybe one of the reasons for that situation is what our curricula promise to the student. I suspect that we still think on how to teach composition primarily based on same paradigms of the Nineteenth Century, as if the jobs that we are preparing composers to, require the skills of an Eighteenth-Century Chapel-Master.

Many contributing factors may explain this situation. Initially let us call attention to the difference of how a composer born in the Eighteenth Century – let us say, Mozart – studied composition, from another born in the Nineteenth Century – for instance, Debussy.

The learning method for the first case was yet the ancient tradition of guilds, which goes back to the Middle Age. Musicians were part of a community that held the practical knowledge of their craft, and trained the next generation, passing the secrets of the business. Classes were a personal interchange between student and master, developed in the atelier of the composer. Students worked also as assistants, filling parts, copying scores. The development of the student craft had the clear purpose of making him able to provide professional products for the existing steady demand of church, opera, chamber, choral and instrumental music. We may guess that the scene depicted in Figure 1 is similar to the daily classes that Mozart received from his father (or later from other teachers).

FIGURE 1 – A musical scene with Leopold Mozart (1719-1787), his son Wolfgang Amadeus (1756-1792) and daughter Maria Anna, nicknamed Nannerl (1751-1829)<sup>1</sup>



The teaching method used was the *partimenti*, which combines harmonic and contrapuntal concepts, not in a theoretical framework, but as a practical improvisatory technique. It aimed to enhance the introversion of schemes by repetition, perceptual familiarity and creative resolution of musical problems. The method required playing the exercises at the harpsichord with the teacher at his side overseeing the performance. Therefore, it was a one to one interaction, sometimes still in use in private teaching (although not the use of the *partimenti* method).

After the French Revolution (1789-1799), professional life changed dramatically for the musician. Positions for Church and Court jobs shrunk. The ideal of a lay state education became the norm. The institution of the Conservatory took over the task of teaching composers, even if the private teaching continued to happen. The novelty was that classes for groups of students, mostly

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<sup>1</sup> Leopold Mozart taught his children himself, aiming the 18th century demand for 'child prodigies'. This lithograph printed in 1764 is a reproduction of a pencil, gouache and watercolour portrait painted in Paris in 1763 by Louis Carrogis (1717-1806), the dramatist, painter, architect and author also known as Carmontelle. The original portrait is in the collection of the Musée Condé, in the Chateau at Chantilly.

for musical theory matters, assumed an increasing importance. Essays and textbooks on many subjects were published: harmony, counterpoint, orchestration, subdividing the expertise of composition in different fields. This new model copied the evolution of other fields of science, a path induced by the prevailing principles of the Enlightenment.

Another consequence was the increasing importance given to the study of models, analyzing the production of composers considered masters, from the past or the present. The analysis, absorption and transformation of another work, i.e. intertextuality as a production model, became the most recommended system to approach music composition. Of course, it was not the first time that this principle appears in music history. On the contrary, the consensus is that many compositions of previous ages used this process. However, we may assume that during the Romantic era there was a steady growth and formalization of the practice of analyzing music written by other composers. A symptom of this interest is Schumann's review of Berlioz's *Symphonie Fantastique*<sup>2</sup>. It includes a detailed formal analysis of the first movement and claims symmetry and reverse recapitulation as novelties in face of the traditional sonata form model. More than that, despite any superficial similarity between the works, Schuster-Craig (2010) proposes that Schumann used the same principles in his String Quartet opus 41, demonstrating how, from that time on, the principle of composition after analysis became a new standard.

The method of copying master works was also the basic principle for the education of painters who attended the Academy of Fine Arts reinstated after the French Revolution. The iconography of the period always shows students gathered around the teacher that explains the beauties of some artwork, his or from other master. This holds true also for music lessons. Instead of a private lesson, the iconography witnesses the practice of group art teaching and discussion (Figure 2).

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<sup>2</sup> Robert Schumann's review "A Symphony by Berlioz" appeared in the *Neue Zeitschrift für Musik* in six installments, between July 3 and August 14, 1835.

FIGURE 2 – Left: “A Studio in the Batignolles (Homage to Manet)” (1870); Right: “Around the piano” (1885). Both paintings by Henri Fantin-Latour.



Photo: archives of the Musée d'Orsay, Paris.

Despite the differences between the two teaching models, one aiming a single individual, the other a group of students, it is possible to say that the appraised knowledge did not change very much. Counterpoint competence, the golden standard for the generation of Mozart and Beethoven, as formalized by authors like Fux, although based on yet older models of the Renaissance, continued to be highly influential, because church music (in opposition to opera) was still economic and culturally relevant. Harmony teaching assumed a more progressive trend but many times it still incorporated the old *partimenti* practice, even though mainly in written form, not improvised at the keyboard as before. The dispute at that crossroad was about the primacy of the harmony or the melody, as Arnold states about André Grétry (1741–1813):

Grétry labelled such composers “harmonists”, a capacious term of disapproval that covered both new interest in experimentation with chord-progressions and the method of teaching composition that focused exclusively on correct part writing over a given bass. [...] But he insisted that any music that began with the bass could rarely be more than a scholastic exercise... (ARNOLD, 2016, p. 57)

During the Eighteenth Century, tonal harmony, species counterpoint and analysis of musical forms (*Formenlehren*) increasingly became the tripod of theoretical fundamentals for training composers at music Conservatories. On the other hand, if Opera was the main goal for someone to become recognized as a successful composer, the teaching methods only marginally considered the particular craft requirements of the genre, exception made perhaps in Italy. Baragwanath presents a detailed account of the education of the most celebrated operatic composer at the second half of the century, Giacomo Puccini (1858-1924).

There was a crucial distinction between “practical” and “theoretical” elements in Italian approaches to harmony and counterpoint. The term *prático* referred to methods of learning counterpoint through singing and harmony through playing [...], while *teórico* signified written elements that supported the study of both. (BARAGWANATH 2011, p. 145).

In the Italian traditions, musicians received teachings on ways to represent sentiments and feelings [...]. There were doctrines on the musical “imitation” of feelings, on the choice of standardized “affects” (rationalized emotional states) to suit the meaning of a particular section of verse, and on the “conduct” of the musical discourse (BARAGWANATH 2011, p. 188).

In many countries, particularly in the United States, during the Twentieth Century, the University absorbed the task of music composition advanced training and research. In many respects, the methods inherited from the previous centuries were preserved. Collective classes of tonal harmony, counterpoint, form and analysis continued to form the basis of the methodology, although most schools also emphasized individual teaching based on supervised compositional projects. Classes on Orchestration became also part of the curricula and other novelties were adapted to it. For instance, when the twelve-tone technique became a dominant aesthetic, atonal counterpoint technique became a new part added to a three-fold counterpoint course: the often still taught today “modal, tonal and atonal styles of counterpoint”. As a personal commentary, my entire education followed this integrated model, starting with private lessons throughout the achievement of a university doctoral degree in music composition.

The absorption of Music as a matter of interest for teaching and research at universities produced an interesting side effect. Because the scientific method is the standard at that institution, the music establishment was challenged to adopt it. Therefore, musicology and music theory, which are naturally prone to it, reached unprecedented levels of formal sophistication. Another fundamental shift corresponds to the external demand of absorbing new technologies developed by the musical industry. The collaboration between university and the technological media became the disrupting factor for the long-established standard of preparing composers as if the music profession still demanded skills with much in common with the former church chapel-master.

## **The expectation of the current students**

Nobody wakes up one day after completing perhaps five years old and thinks... “I will become a music composer!” The desire to compose music develops gradually over the years and depends fundamentally on a variety of experiences with music and sound. Maybe starts with playing some instrument and is deeply influenced by what we listen to.

The relation we have with musical listening changed dramatically over the last one hundred years. Listening to music around 1900 involved some kind of live performance. It might be at the church, or at the opera house, or the concert hall, or even at home if some family member played an instrument or sang. It was a special and relatively short moment in the midst of the public daily life. Only the performer might have had a more prolonged experience with the repertoire because of its preparation.

When recording and broadcasting appeared, musical listening experienced a deep change. I do not need to remind the impact that radio, recording, film, television and more recently the internet had in music reception. It expanded horizons, ubiquity, repertoires, time spans etc. Most of the music that people listen nowadays depends on some industrial device, not on live performances.

During the first decades of this paradigm shift most of the products were simple reproductions of what was done or at least could be done on actual live performances. Gradually a new standard emerged. Music started to be conceived and produced for the media that carries the sound. This new reality affects the imaginary of the student that seeks a course of music composition.

What I find today is that most composition students aim their carrier as a film composer, or to work with recordings and other media, and not as a composer for concert music. They do not separate as incompatible the styles of concert and popular music. The way they built the repertoire that occupy their imaginary does not follow any systematic approach and comes from a large variety of sources. Therefore, when you try to teach them composition with the same systematic approach used for the chapel-master ideal, the results are not encouraging.

I do not mean, at all, that the gigantic amount of knowledge accumulated during centuries of composition teaching is worthless. I mean that the expectations are different. Therefore, the

approach needs to be different.

The most evident obstacle that usually comes up is the gap between theoretical training and practical application in composition. The teaching of harmony and counterpoint remains solidly grounded in the curricula. Nevertheless, usually the current generation of students seems to have a greater difficulty to translate the theoretical skills into sound experiences, into real music. They think they will please the teacher if they write correctly displayed notes on the paper as they practice in harmony or counterpoint exercises. They write notes thinking that notes are the quintessence of music<sup>3</sup>. When I say notes, I mean pitches, because rhythm and other parameters seldom achieve a significant role on these trials.

Newer generations are being exposed in their initial years of life mostly to popular music that focus the discourse in simpler harmonic, melodic and rhythmic invention. The attention has been directed to the relation of sound with images. I use to say that youngsters do not really listen to music: they mostly “see” music. Dance and image production captivate their attention in media like MTV or YouTube. Even when they are just listening, with their earphones, they walk, they move, the perception continue to relate to bodily experiences. As teachers, we have to accept this as reality, and depart from it. Besides that, their familiarity and interest in technological media for sound production is a contributing factor that led me to reformulate my teaching approach over the last decade.

Paulo Freire, a worldwide-recognized Brazilian pedagogue, recommends that we consider the context of the student to design our pedagogical strategy. Notice that I never read that he recommended we should limit the scope of the teaching to contextual issues, as alleged by some of his critics. Freire’s point is to conquer empathy to enhance human interaction.

Following this line of reasoning, I changed the old methods used in my composition courses to encompass projects that require direct sound manipulation and less written notation. Those projects, which may be addressed as simple electroacoustic compositions, of the concrete music

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<sup>3</sup> Regarding this, I would like to add a complementary perspective. The idea of the artist in the classical sense is being disintegrated by the effect of the “celebrity” model. I also notice that this model is of no interest to most students. That is why there is a greater tendency for them to become professionals in the industry, since what they primarily know is the industrial music market, and few have any knowledge or experience with the art music market. Even so, they were attracted to the composition course.

genre, constitute a viable approach to turn the compositional product into something that is audible from the beginning. The required technological skills are quite simple and usually the student is already familiar with them, or very quickly masters the necessary knowledge to develop a simple project of concrete music. Emphasis is given on how to generate derived materials and how to organize them to build a musical discourse. My initial surprise was how fast and easily the students accept the challenge and dive into it. The explanation is simple: the language of electroacoustic music is completely familiar to them because it has been absorbed watching films, where music coexists with sound design, special sound effects, Foley etc.

The second little project assigned to the students is to use the same technique to compose a sound track to some short movie. In this project, it is forbidden to use music based on traditional pitch organization or any sort of instrumental performance, even if virtual. Only direct sound manipulation is allowed.

The following project is to compose a three minutes song mixing simple melodic and harmonic material with manipulated concrete sound, however without image superposition. Notation is required and recording of instruments allowed.

This three-fold process induces the student to a better comprehension of the relation between music in the traditional sense, sound manipulation and image synesthesia in products of the cultural industry that she/he is used to absorb, and which built most of their music background when they start the course.

From then on, we proceed to integrate knowledge taught at the traditional music theory courses of the curriculum: harmony, counterpoint and form. The idea was not to substitute one for the other but to integrate all of them in any way the student wishes.

Another traditionally controversial problem is the resistance of the beginner student to contemporary techniques. In this topic, we may include all post-tonal techniques. Paradoxically this phenomenon has lost its original “roughness” as the years passed by. Students arrive today with less exposure to “real” tonal music, from both classical and popular repertoires, but more exposure to a variety of other styles, like rock and many kinds of multimedia and visual music. The impact of the contrast between tonal and atonal is not as marked as it used to be decades ago. Again, the role of film music is evident in that matter. All kinds of post-tonal techniques are used in the audio-visual

domain, turning familiar to the ears of the public the musical vocabulary and syntax of many different sound styles. Of course, the students still manifest preferences, but, in my experience, with less prejudice. Many times, on the contrary, they are fascinated to discover new means of expression that go beyond their ordinary experience. Therefore, the addition of more recent compositional techniques becomes a natural process since the student has already realized that the problem does not depend on the nature of the vocabulary, but on the skill to organize it.

### **New challenges brought by some current students**

It is quite striking that, if some students arrive with quite naïve ideas about music composition, ideas like becoming the next Rachmaninoff or the next famous film music composer (and indeed, the first instinct of many of them is to compose music in mainstream Hollywood style), on the other hand, occasionally, I received students with highly sophisticated computer skills. They come fascinated by the possibility of approaching composition by developing computer programs. I do not mean using commercial computer programs, like Finale or Sibelius for music notation, neither others for sound recording and edition. They are interested in the challenge of artificial intelligence programs accomplishing the task of computer generating music.

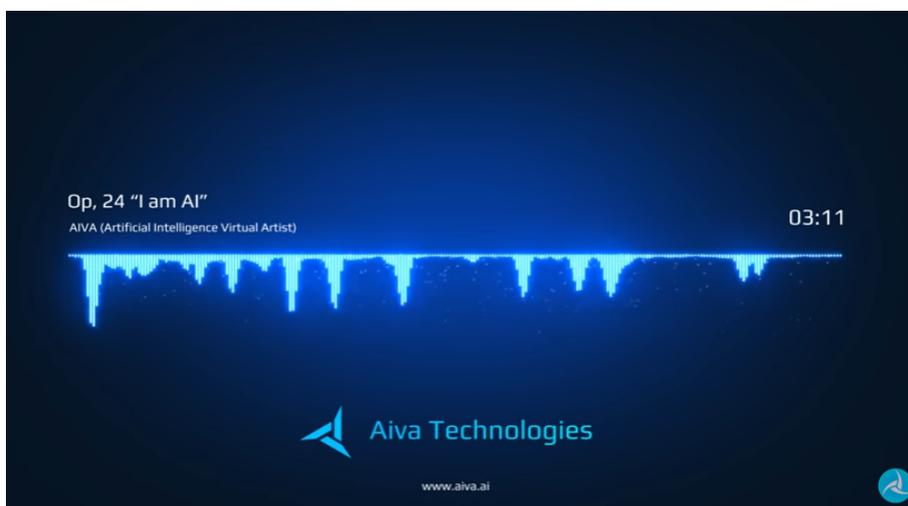
Recently, the most common input that spark their interest is the information that Google has a research project, called Magenta, involving automatic computer music composition. They have seen it on the Internet or elsewhere, and are interested in the job market that this trend may offer to them. Programming is not their main problem. Usually they come to the course with enough expertise in this matter. Aesthetically, however, they tend to be naïve, and can hardly grasp any advantage of using a computer to compose music, instead of doing manually. They just surf the media news wave.

FIGURE 3 – A print-screen of YouTube demonstration of the Google’s Magenta Project<sup>4</sup>



Others have seen musical applications of artificial intelligence developed by commercial companies, like AIVA Technologies (Figure 4). The style of these musical products emulates commercial film music what is precisely the trait that fits the aesthetic interest of these students.

FIGURE 4 – Examples of computer-generated music by Aiva Technologies<sup>5</sup>



The students also envision the potential of this technology for audio-visual applications, because the AIVA company obviously also aims this market and advertise it in other videos (Figure 5).

<sup>4</sup> Retrieved from: <<https://www.youtube.com/watch?v=2f20d0LJSuk&t=474s>>. Accessed on 31 jan. 2020.

<sup>5</sup> Retrieved from: <<https://www.youtube.com/watch?v=HAflCTRuh7U&t=182s>>. Accessed on 31 jan. 2020.

FIGURE 5 – Aiva Technologies – I Am AI: MWC Los Angeles 2019<sup>6</sup>



This discussion confirms what we already knew: the means of art production affects decisively the resulting product. Since I start producing music there were many changes in the way music could be conceived and generated. I am considering just the field of concert music, let alone commercial pop music. Recording and broadcasting technologies, computers, keyboards, synthetic sounds etc. all had profound impacts in music production. Each one caused some degree of paradigm shift.

The AI technology of neural networks applied to music composition promises to alter drastically the landscape, again. Once more, the teacher of music composition needs to upgrade his skills if he wants to keep up with the demand of the students. New programming languages and much more complex algorithms have to be mastered. There is also a major change of direction in aesthetic purposes. The ambition of originality, as we were used to, drops in the rank of priorities. The norm becomes to compose derivative music based on variation rather than invention, accepting that there is no problem in keeping standards unchanged. This kind of music does not search for the unheard, but this posture fits well the expectations of most multimedia productions.

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<sup>6</sup> Retrieved from: <<https://www.youtube.com/watch?v=nhtNEckbQws&t=19s>>. Accessed on: 31 jan. 2020.

## Conclusion

Will the old Chapel-Master methodology or even courses such as counterpoint and harmony be one day considered as obsolete for the education of new composers? One has to consider that academic institutions are very resistant to changes. So, this shift might slowly occur, perhaps by emerging a new paradigm (and I think it is already happening). Harmony, as a course, does not tend to become obsolete, because the persistence of tonal models preserves the need of teaching it. With counterpoint it is different, considering that it is already in decline in many curricula around the world, being sometimes incorporated in harmony course books. See, for instance, the excellent textbook of Roig-Francoli (2003). This also happens because the principle of voice independence occurs in several computer models of sound modelling, from sound editors and mixing, to algorithmic composition. On the other hand, nobody loses anything by studying the rules of different styles of counterpoint. Quite the opposite, you learn how to build a style. The biggest problem with counterpoint lies within our universities current learning model. It is impossible to teach counterpoint in collective classes. If the professor does not correct each student's exercise, the exercise is useless. The teacher's work becomes insane and little valued, especially in the Brazilian model that considers research as the main goal. However, there will always be individual interaction between master and student, which can better handle this task. In fact, I only believe in teaching composition in the old model of individual interaction, which is elitist but efficient. And mostly because there is no solution for the professional market to assimilate hundreds of new composers of art music graduated every year from universities. As job profiles of composers change with time, we might assume that the teaching and training should change too. Nevertheless, most of our teaching efforts are still based on models consolidated over the centuries, some outdated, others not so much. Occasionally it has been possible to introduce small changes, like the approach based on direct sound manipulation, as described before. However, a major shift towards computer technologies, as the demand seems to move towards, would require a new student profile for admissions and a new teacher profile for job selection. A new equilibrium between traditional methods and new techniques of computer assisted/computer-generated music composition will

emerge. However, it probably will not happen anytime soon. This means that meanwhile the tendency is to increase the gap between the industrial music market and the academia.

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