



Audio Engineering Society

Convention Paper

Presented at the 151st Convention
2021 October, Las Vegas, NV, and Online

This Convention paper was selected based on a submitted abstract and 750-word precis that have been peer reviewed by at least two qualified anonymous reviewers. The complete manuscript was not peer reviewed. This convention paper has been reproduced from the author's advance manuscript without editing, corrections, or consideration by the Review Board. The AES takes no responsibility for the contents. This paper is available in the AES E-Library, <http://www.aes.org/e-lib>. All rights reserved. Reproduction of this paper, or any portion thereof, is not permitted without direct permission from the Journal of the Audio Engineering Society.

Tools for Visual Thinking: Teaching Electronic Music

C. Graham Spice¹

¹ Shenandoah Conservatory, Shenandoah University, Winchester VA 22601

Correspondence should be addressed to C. Graham Spice (gspice@su.edu)

ABSTRACT

Teaching the history and compositional techniques of electronic music can be challenging because there are few practical resources available for developing course curriculums, and current music styles are constantly changing. Here we explain the benefits of a few assignments that help students connect the analysis of classic Electronic Dance Music (EDM) songs with creating their own compositions that “nail the style.” Creating timeline analyses of classic EDM songs form a visual representation of how the elements of an arrangement develop. Students later use these timeline analyses as visual blueprints for EDM song arrangements that they compose. Critical listening plays a vital role in creating these detailed timeline analyses that encourage self-discovery of each element’s musical characteristics. This work positively influences the composer’s ability to “nail the style.” Pedagogical experiences based on self-discovery offer greater permanence through structured learning.

1 Introduction

Elements of electronic music can be identified in today’s popular music genres such as instrumentation (drum machines, synthesizers, etc.) and other characteristics such as samples and effects. Many schools want to add various aspects of Electronic Dance Music (EDM) to their curriculum but run into difficulty because of the lack of pedagogical resources and difficulty addressing styles that are still evolving. Assigning self-directed learning tasks that combine critical listening with visual thinking strategies can be helpful when teaching EDM styles.

2 Background

I began researching electronic music in 2006 to offer a course that would explore a select number of EDM genres and the compositional techniques of each. My research eventually settled on six fundamental electronic music genres because of their historical significance, popularity, influence on other genres, and the unique skill sets that each genre can develop.

These six genres are:

1. Pioneers
2. House
3. Techno/Trance
4. Big Beat
5. Drum’n’Bass
6. Downtempo

Examples of the music technology skillsets that each genre can develop would include:

- Pioneers = Sampling/Effects
- House = Drum Programming
- Techno/Trance = MIDI Effects/Modulation
- Big Beat = Drum Loops/Samples
- Drum'n'Bass = Glitching Loops/Effects
- Downtempo = Arrangement/Effects

It became clear that each style of electronic music had important historical components related to the time, geographical location, and other factors of the "scene" that were inextricably tied to its establishment and development. In addition to compositional techniques and general characteristics, relating each genre to its historical background would be critical to the success of the course.

3 Course Implementation

Considering the fast pace of the commercial music industry, I picked 8-10 classic songs for each of the six chosen genres that initially helped define and set it apart from other styles. We assessed song recognition with bi-weekly listening quizzes where students were asked to identify the artist and song title correctly.

It is essential to know the artists who defined these styles. Just as Dizzy Gillespie and Charlie Parker are known for developing the bebop style of jazz, Fatboy Slim and the Chemical Brothers are synonymous with the sound of Big Beat.

"Gaining a deeper understanding of arrangement is also a great way to explore different genres and styles." [1] The timeline analysis assignment combines the continued focus from our degree program on critical listening with the self-directed study of song arrangement. Students use the free, cloud-based spreadsheet application Google Sheets to create a column representing each musical element they identify and rows that contain track times for when the elements enter and leave. The cells are then filled in with a unique color per row for each element. As depicted in Fig. 1, this timeline analysis results in a clear visual representation of the song's arrangement. Even a casual Digital Audio Workstation (DAW) user will quickly make the visual connection between the timeline analysis of an arrangement and the visual representation of tracks in a DAW (Fig. 2).

Establishing tension and release is a key ingredient in all music but crucial to EDM, so essential that these

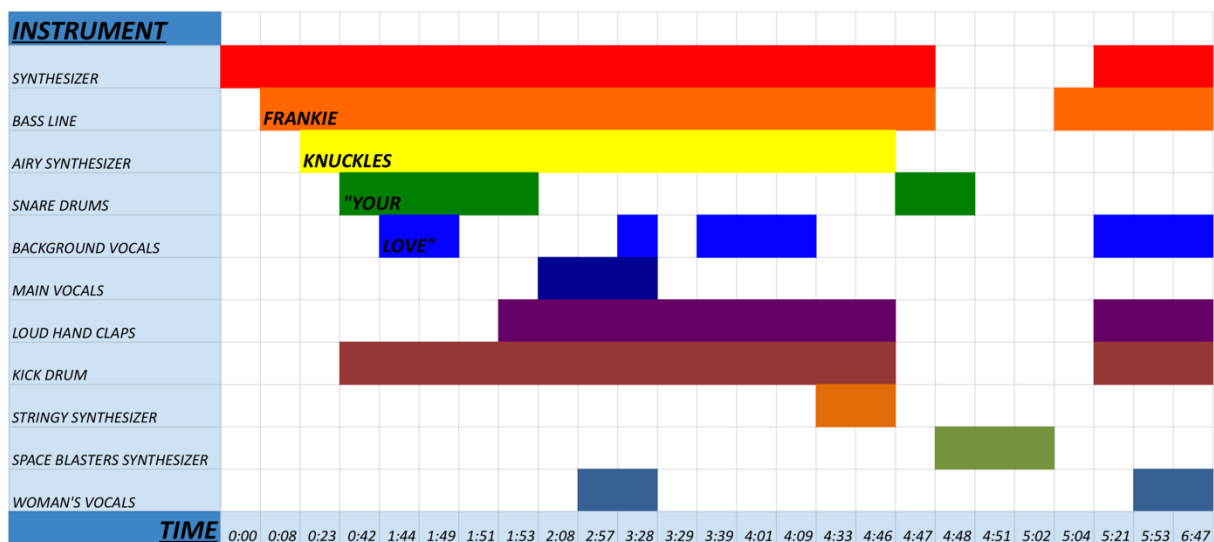


Figure 1. Example Timeline Analysis created in Google Sheets for Frankie Knuckles' early House hit called "Your Love".



Figure 2. Ableton Live's Arrangement View representing Frankie Knuckles "Your Love".

moments have their own terminology that has permeated pop culture [2]: the "build" and the "drop." It is interesting to note that "Release in this music is produced not by the absence or removal of the methods that build tension, but by the addition, or more precisely, the return to a basic groove." [3]

As a tool for exploring song arranging, the timeline analyses offer a clear picture of where builds and drops happen. The timelines highlight locations in the song arrangement where multiple elements disappear, often seen as a primarily blank area, followed by a return of several elements- often simultaneously. This critical section(s) of the song where the tension and release occur can easily be seen with a glance at the timeline.

Essential characteristics that help define each genre usually include the song's tempo (beats per minute or BPM), drum patterns, prominent sounds such as instruments and samples, effects, harmonic structure, melodies, and lyrical content. These characteristics are defined and explored through a lecture with relevant examples, and the unit is assessed through a listening quiz and timeline analysis. Students are also tasked with composing a piece of music that "nails the style." These compositions are graded on how closely their arrangement follows the blueprint from their timeline analysis and how well they have included these genre-defining characteristics.

Each of the six genres is allotted two weeks in a sixteen-week semester, with the class meeting twice a week for one hour. The first week contains a reading assignment and lecture highlighting related historical trends and an overview of the genre's most popular and ground-breaking artists. The first week also includes a listening test, and the timeline analysis is due. The second week is focused on composition and arrangement techniques specific to the genre. These might include drum patterns, choice of sounds, vocals, use of effects, and manipulating samples and MIDI note data.

4 Observations

"Nailing the style" is the overarching skill that students are asked to develop throughout the course. Students are typically better able to point out the differences between the genres and create compositions that achieve this goal when they critically listen to classic songs using this timeline analysis technique.

The importance of choosing a representative collection of songs for each genre cannot be overstated. Students may not be familiar with all these genres, so the listening examples must align with the typical qualities and techniques that accurately and thoroughly represent each genre. Students are asked to choose one song for the timeline analysis in each genre, so the songs must represent standard arrangement techniques that can be emulated.

Students are regularly reminded that there is no expectation of creating music in their professional work that sounds like early House music from Chicago. They leave this class with more tools and a broader palette of sounds, along with a greater understanding of arrangement and composition through their work in critical listening.

5 Conclusion

After this course, students will be able to:

1. Demonstrate standard audio production techniques utilizing MIDI
2. Critically analyze popular music using a time-based method of analysis
3. Discuss the history and development of Electronic Music from its origins to today
4. Identify important musical works of Electronic Music from different periods
5. Compose music using the hallmarks of each Electronic Music genre covered

The work to analyze song arrangements visually also becomes part of a framework for building critical listening skills. It has been established that there is “a powerful connection between critical listening skills and visual analysis.” [4] The self-directed learning tasks presented in this paper have worked for me as an educator teaching this material by combining critical listening with visual thinking strategies.

6 Acknowledgments

Thanks to the students, faculty, and staff of Shenandoah Conservatory for your continued support. We learn so much from each other!

Heartfelt thanks to my wife Ashley, brother Reid, and his wife Tara for offering their ideas and critical analyses of this paper.

References

- [1] Future Audio Workshop, “Creating a Visual Arrangement Map,” <https://futureaudioworkshop.com/creating-visual-maps-to-improve-your-arrangements/> (accessed Jun. 5, 2021).
- [2] The Lonely Island, “When Will The Bass Drop? (ft. Lil Jon),” <https://www.youtube.com/watch?v=XCawU6BE8P8> (accessed Jun. 5, 2021).
- [3] D. Iler, “Formal Devices of Trance and House Music: Breakdowns, Buildups, and Anthems,” <https://digital.library.unt.edu/ark:/67531/metadc103332/> (accessed Jul. 3, 2021).
- [4] D. Walzer, “Critical Listening Assessment in Undergraduate Music Technology Programmes,” *J. Music Tech. and Edu.*, 8. 10.1386/jmte.8.1.41_1, (2015).