Sonatas, Rondos, and Cupcakes: The Efficacy of Collaborative Learning in Undergraduate Music Theory Courses

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INTRODUCTION (The Problem)

This paper examines the efficacy of collaborative and creative learning models in undergraduate music theory courses, using as comparative case studies group projects I assigned in three consecutive Form and Analysis classes from 2011 through 2014. I make the case that creative group projects, when executed correctly, have a net benefit for students, and that we as educators should make more effective use of them in our courses.

Since the advent of Project-Based Learning (PBL) in the 1960’s, much pedagogical research – particularly in the fields of engineering and computer science – has indicated that group work and open-ended project formats can lead to improved student performance, more lasting content retention, and more positive classroom experiences. Assessment and pedagogy experts back up this assertion with robust assessment rubrics for group work and calls for more student-initiated projects. It seems obvious: students learn more and do better when working together to tackle big problems relevant to their lives and future careers.

And yet, anecdotal experience from students and instructors alike often paints a far more critical picture of these project formats. An instructor can scarcely get the words “group project” out of her mouth before being overtaken by a collective groan and wave of muttered asides. Stories abound of one group member not pulling his weight, or another not showing up to meet with her group. Similarly, a large creative project, especially one whose very presentation format is up to the students themselves, can very easily become too vague in its requirements, too subjective in its grading, or too time consuming in its execution. And a certain subset of students always seem to raise objections or freeze up in the absence of clear, step-by-step expectations and instructions. I think you’ll agree that we’ve all met a handful of these types, if not been one ourselves.

With all these variables and barriers, why not just assign individual papers or specific analysis projects and avoid the hassle? Because, as I mentioned earlier, a growing body of research suggests that both team-based
projects and creative or open-ended project formats are often times more effective than traditional individual assignments. They increase both student learning and student engagement in the course. I have certainly found this to be the case in assigning projects in my own undergraduate music theory courses. And, if you’re not already doing so, I encourage you to consider implementing carefully-designed creative format group work in your own music courses as well, whether in music theory, history, education, or any other subdiscipline.

MATERIALS AND METHODS (The Projects)

This paper will detail my experience teaching Form and Analysis at The University of Texas at Tyler in the Fall of 2011, 2013, and 2014, and will focus specifically on my evolving approach to designing group projects during that time. Elements that changed from year to year included the project format itself, the class size, the group size, the group selection process, the number of group projects assigned during the course, and the time allowed to complete the project.

YEAR 1 – FALL 2011

The Fall of 2011 was my first semester out of graduate school, and my first semester teaching an upper-division course. The combination of more complex course material, a moderately heavy teaching load of four courses, and a high course enrollment in Form and Analysis had me worried. (Typically, enrollments in UT Tyler’s music theory courses are mercifully small, averaging 8 to 14 students. But Form had 32 students in 2011; it’s a required course for every music major, and was at the time only offered every other year.) I initially came to the idea of assigning group projects at the suggestion of a colleague, as a way of making my grading load more manageable. (I also assigned both a 10- to 12-page paper and a Final Exam in 2011; never again!)

In Fall 2011, I actually assigned four separate group projects throughout the semester. Today I’ll focus on just one of those 2011 projects. [Slide 2: Table of Fall 2011 project stats only] The format was a traditional four-page analysis paper with two embedded musical figures required. With a class size of 32, I divided my students into 6 groups of either 5 or 6 members. Being new and not knowing any of them, I let the students select their own groups. I assumed this would result in everyone teaming with at least some familiar partners,
resulting in less internal group conflict. Because there were four small group projects spread throughout the semester, I gave students just under three weeks to complete this. And lastly, the form analyzed in this particular project were the small forms within a piano minuet. [Slide 3: 2011 handout, 2 pages] Briefly, here is the handout I gave students describing the project.

[Slide 4: 2011 sample paper, 4 pages] And here is one sample paper submitted for this assignment by one of the higher performing groups in the class. Most of the major points of analysis are accurate, detailing the overall form and the functions of the various phrases. There are good discussions of what constitutes a double period, why a particular phrase was labeled as transitional, and the general difference between developmental and transitional phrases. There are a number of small issues with the precise use of terminology (consequence vs. consequent phrases), inconsistent use of figures (sizing, clefs), and awkward prose (use of the term “proven”, introduction and conclusion repeat the same material), but overall it is solid B-level material. Group grades on this project were fairly typical, ranging from middle D’s to low A’s. While there was certainly room for improvement, this assignment, along with the other three group projects that semester, seemed largely successful in the short term.

[Slide 5: Blank] But the surprise came at the end of the semester. The 2011 Final Exams, which consisted of terminology, short essays, and analysis portions, came back with a surprisingly low mid-70 percent class average. More surprisingly, the individual 10-page Final Analysis Papers, intended as the culmination of the topics practiced in the four group analyses throughout the semester, were actually of a lower quality on average, both in content and in presentation, than all of the earlier group work. Maybe this was due to the higher-performing students in each group doing more of the work, resulting in more polished group papers. (I did receive five or six complaints about group members making little to no contributions.) Or maybe the end of semester crush of final papers and exams and juries was so overwhelming that students couldn’t devote enough time to produce their best work near the end. Or maybe I was an inexperienced teacher still learning the ropes, and I’ve (fingers crossed) gotten better since then. Whatever the reason, what little objective course data I collected seemed to indicate that students could only demonstrate marginal proficiency in my stated course learning objectives.
One thing I can say with confidence: neither the students nor I could still remember today any specifics about this 2011 assignment or its content without first reviewing the paper. Sure, it’s been three and a half years since then. But no matter how you dress it up, it’s just hard to make a standard four-page analysis paper stand out. Could that be one missing piece in my effort to get my lessons to stick?

I’ve been attending CMS conferences regularly since 2009, but after this first, semi-successful semester of full time teaching, I started paying more regular attention to sessions on pedagogy and theory/aural skills. I spoke with other instructors and theorists, browsed journals, and listened for a while.

[Slide 6: Bulleted List] Here are some of the broad lessons I’ve taken from this search so far. Don’t worry if you don’t catch the entire list; I’ll display it again at the end, and I’m happy to email you my slides afterwards if you’re interested.

First, create engaging assignments connected to real-world problems. Contrived examples can be easier and are sometimes necessary, but they rarely equip students fully for engaging in music as musicians. Next, build into your project some degree of student autonomy and freedom over the music analyzed and/or the project format itself, within clearly specified parameters. This gives students a sense of ownership in their work and reminds them that you won’t always be there to hand-hold. Use group projects deliberately, and be sure to address students’ trepidation surrounding group work at the start, and say how you will avoid potential conflicts together and ensure accountability. Use a student-authored group contract, checkpoints, and/or other measures to establish that accountability. Also, aim for group sizes of 4 to 5 to encourage diversity of thought but leave everyone a chance to contribute meaningfully. Assign those groups yourself with the intention of creating heterogenous ability levels. (Perhaps ironically, both the high- and low-performing students actually do better work generally when group members have differing ability levels.) Whether it’s a group project or not, allow students plenty of time to complete the project, being sure to devote some class time not only to explaining the project, but to actually working on it and fielding questions. Whenever possible, assess students’ process as well as their final products, and build this into your group contracts and grading rubric. This will hold students accountable throughout the duration of the project, and break the work into discrete, more manageable chunks. Lastly, revise these major assignments each time you teach, based on your experience, research, and
conversations with other instructors. I’m sure most of these are all fairly standard and accepted notions that many in this room have already learned through research or in the trenches of the classroom. But, especially if your specialty isn’t in education or pedagogy, you may find these tips useful. I know I did, and I used them to improve my group project design after 2011.

[Slide 7: Blank]

YEAR 2 – FALL 2013

Fall 2013 was my second time teaching Form and Analysis, and I was determined to make the Group Project more successful and enjoyable this time around. [Slide 8: Table of Fall 2011 and Fall 2013 project stats together] Here again was the basic design of my 2011 project. And here’s how the project looked in 2013. The biggest change was that the format of the submission was completely up to the students. The content was dictated – this time they’d be analyzing a sonata form movement from a symphony – but the medium could be just about anything: a paper, a video, a set of drawings, etc. And students were explicitly encouraged, both by my handout and in my verbal introduction, to be creative. The class was still large, with an enrollment of 35, but groups were limited to 5 members. I placed students into groups myself, based on their ability levels. Shortly before announcing the project, I assigned ranks based on the averages of individual students’ overall class grades to-date and their Midterm Exam results. Using this ranking, I ensured group skill heterogeneity by applying the “snake draft” method familiar to anyone in an NFL Fantasy League: Group 1 got the first pick in round 1, but the last pick in round 2, and so on. It helped that this was the only group project I assigned this semester, and that I gave students a full four weeks to complete it. I was also very upfront with my students in regards to this group project, its purpose and design, and its intended pedagogical benefits. While there were a few mild grumbles at first mention, my description of the project and accompanying rationale for including it seemed to sway the public opinion.

[Slide 9: 2013 handout, 3 pages] Here is the revised project handout for 2013. While the project format is left up to the creativity of the students, do note that I have selected the specific composition to be analyzed, explicitly named sonata as the form being modeled, and listed a number of very specific musical features that
must be analyzed and incorporated somehow into the final product. One final modification, which you can see on page 3, was to require students to draft a Group Contract at least one week before submitting the actual project. This Contract outlined, at a minimum, the type of project to be created, and who would be ultimately responsible for which portions of the process and end result. This Contract element seemed to win over the few students who raised objections at first, formerly claiming that they frequently get stuck doing all the work.

[Slide 10: 2013 sample projects, various pictures] And here are some sample projects submitted that year. One of my favorites was the playable board game, Schubert Showdown. Players take turns answering trivia questions about Schubert’s life, and try to advance through a three-part landscape, featuring the Exposition Everglades, Development Desert, and Recapitulation Rapids, all inspired by the analyzed symphony movement. Notice how the required analytical information is labeled on the game board itself. I also really enjoyed this oversized Civil War themed pop-up book. This group took quite literally an analogy from my lectures of the two primary themes of a sonata as being at war, and their respective keys being the battlefields upon which that fight took place. This plot was overlaid with the story of the American Civil War, and narrations and illustrated scenes were accompanied by small captions of the analogous analytical information. Some pages even have parts for the reader to move. How interactive! There was also a children’s storybook, and three groups who created videos – one a slideshow of selections from the assigned music’s audio paired with a montage of images from a production West Side Story; another a narrated story of a day in the life of two music majors representing themes 1 and 2; and the last, “The Chet and Eliza Experience”, a short original movie reflecting the form of the music itself. Lastly, as alluded to in the title of my paper, one group created (and then served) a three-tiered cupcake platter representing the form of the movement. Appearances of themes 1 and 2 were represented by chocolate and vanilla batter flavors, formal sections by frosting colors, and important key centers by letters written in jelly.

[Slide 11: Blank] These projects were all a lot more interesting than the papers I received in 2011. But how did they compare in terms of content and quality of work? The students’ level of analytical accuracy in the 2013 projects was honestly about the same as compared to that of 2011, or maybe very slightly improved. While they were more creative and more fun to evaluate, and some were exceptionally accurate and thorough in
their analyses, others displayed factual errors of analysis and/or unclear correlations between their analytical observations and their finished artistic products. Of course, these students in 2013 were dealing with the much more complex topic of an eleven-minute symphony first movement in sonata form, rather than the 2011 class’ comparatively short minuet and trio for piano. Still, taken as a class they were only marginally better, if at all. But what each of these attempts from 2013 had in common with each other, and what really set them apart from the 2011 batch, is that most students were heavily invested in creating an impressive and creative product, resulting in striking and memorable projects. By the end, the majority of students really appeared to enjoy having worked on their projects, showing them off to each other, and seeing what other groups had created.

At the end of the term, I happily observed a notable increase in the quality and polish of the individual 10-page Final Analysis Papers. Again, this increase could be attributed to the fact that I did away with the Final Exam, leaving students more time to focus on the final paper. Or it could be due to my own improvements as an instructor. It’s even possible that students in 2013 were less able to hide behind others’ work during the group project due to the new Contract, so group grades weren’t inflated as may have happened in 2011. Whatever the reasons or reasons, the 2013 class as a whole exhibited greater proficiency in my stated course learning objectives by the end of the course, as shown through a stronger overall performance on the final analysis paper. And, at the end of the day, isn’t that the primary goal of a Form and Analysis class? To read and interpret music analytically, and to summarize and present those findings in a coherent manner? By this measure, I would say that the class 2013 was more of a success than in 2011.

The one significant failure of the 2013 projects I should mention came in the form of plagiarism. Many groups turned in their required written analysis labels separately from their creative products, and I believe that a sizeable portion of one of the analyses was plagiarized from another group. I discussed this in conference with those two groups only, and grades were adjusted accordingly. Because of the division of labor spelled out in the Contract, this conversation was much easier. In retrospect, having all groups analyze the same composition saved me a lot of time in lesson preparation, but it did open up the possibility of students improperly collaborating across groups. I would learn from this as well and continue to refine my plans in the future.
Building on my experience in 2013, I designed a new but very similar project for 2014. The biggest changes were the enrollment and group sizes, the form analyzed, and the assigning of specific works to each group. Because Form and Analysis began being offered every Fall, my enrollment was down to an exceedingly manageable 10 students, which I split into 3 groups of 3 or 4 members of heterogenous abilities using my previously described “snake draft” method. I decided to tackle rondo form in 2014 rather than sonata, and I chose separate music for each group – mostly symphonic with one chamber work. This took some extra preparation time, but it was worth it. One of the unexpected benefits of this decision was that I was able to tailor one of the musical selections to the specific students in that group: Group 1 included both an oboist and a horn player, so they were assigned a pair of short Mozart concerto final movements written for their instruments. This sort of customization would have been too cumbersome with the larger classes. The format was still up to the students, and all other aspects remained virtually the same.

Briefly, here is the handout I gave students describing last semester’s 2014 project.

And here are some sample projects submitted that semester. One was a humorous Halloween public service announcement warning Trick-or-Treaters not to eat too much candy. What exactly this had to do with the Brahms Violin Concerto in D, whether in program or in formal construction, I’m still not entirely sure to this day. Thankfully, this group did turn in a separate analysis sheet that showed a strong correlation to the musical events and form in their assigned movement. The other group to complete a video was assigned the delightfully tuneful Dvořák Rondo in G Minor for Cello and Piano. They filmed a love triangle in which two male characters, Theme 1 and Theme 2, alternatingly vie for the attention of a mutual love interest, come into conflict, and ultimately realize that the love interest is already spoken for. I suspect this artistic choice was meant to reflect the closing section of the rondo, in which both the A and the B themes surprisingly appear together. I had expressed to these students early on that the sectional format of a rondo form would probably be better displayed through one primary character, and a series of
contrasting characters, but they were set on this love triangle idea. At least they used the complete movement as the background music to their film, and the scenes were timed to reflect the changing musical sections. The third and final project in 2014 featured a pair of rectangular cakes, one for each Mozart rondo movement. Large formal sections and their order of appearance were indicated by large frosting letters on the cakes, while the locations of key centers and phrase labels were detailed in a separate PowerPoint presentation. While not nearly as fancy or quite as factually correct as the edible analysis project I received in 2013, these cakes were tasty and, more importantly, reasonably accurate.

[Slide 15: Blank] Subjectively, I found the level of creativity and ambition shown in the 2014 round of projects to be just slightly lower than those in 2013. I attribute this to the smaller group sizes, perhaps causing less diversity of thought within groups, and the smaller number of teams, which may have led to a reduced sense of competition among the groups. In any case, last semester’s students seemed to enjoy the process of putting the projects together. But did this memorable experience help students retain their knowledge of rondo form throughout the semester? In lieu of the dreaded Final Exam of 2011, I designed and administered a non-graded End-of-Term Assessment in my Form and Analysis class during the last class day of Fall of 2014. This was partly a response to our department’s official Assessment program, which I spearheaded and completely redesigned starting in 2013. But the Assessment also allowed me to capture data that would have been lost due to the removal of the Final Exam – namely, did students learn and retain a general understanding of the construction of larger forms, and the ability to analyze small forms in real time?

[Slide 16: Assessment data from Form and Analysis Fall 2014, either first 2 or all 8 pages] Each component of this Assessment was graded on three levels – as either “correct”, “mostly correct with some errors”, or “mostly or completely incorrect”. As you can see in Part II Question #1, the 9 students who took this Assessment all correctly identified the smaller form as continuous rather than sectional. Part II Question #2 shows they were more mixed in their abilities to identify the small form and give supporting evidence for that label. Students were similarly mixed in their abilities to recall and diagram the main structural components of larger musical forms. Question #1 of Part I asked students to diagram a typical 7-part rondo form, while Question #2 covered the sonata form. You’ll notice that students performed better on the diagram of the rondo,
which is the same form they studied as part of their four-week group projects that semester. Maybe this result is due to rondo being a comparatively simpler form. And perhaps this entire data set is skewed by the one missing student and the fact that students knew ahead of time that the Assessment was not a graded component of the class. But I believe this result gives at least some credibility to my belief that this group project was worthwhile, not only in terms of student learning and engagement, but also in terms of knowledge retention through the end of the term.

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CONCLUSIONS

While my Group Project in Form and Analysis has come a long way since 2011, I know there is always room for improvement. In the future I plan to make the Contract due two or three weeks before the final product due date, to give sufficient time for the development and implementation of students’ ideas. I will also integrate multiple graded checkpoints into the Group Contract process, with the goal of more accurately assessing the students’ process along with their end products. And lastly, I hope to make the integration of the group’s analytical details into the actual form of the finished artistic product more heavily weighted in the grading. Hopefully, this will dissuade students from creating fun but musically irrelevant projects, with a separate analysis sheet on the side. Perhaps some of you have your own ideas for future improvements to my project.

Since Fall of 2013, I have begun implementing into most of my other music theory courses even more group and open-ended project formats, separately and both in the same assignments. I’ve used them from the undergraduate theory sequence up through my graduate analysis class this semester. Each of my theory courses has three major projects built around some complete piece of music, in addition to the smaller workbook assignments and other daily homework. At least one of these larger Analysis Projects per semester includes a short essay writing component. The first Analysis Project I’ve started giving my freshmen is to bring in any short musical work they like from any genre, style, or time period, and make purely musical statements about why it is great music. While this is a relatively tiny project, the autonomy required to complete the course gives me a glimpse into the students’ musical tastes, and sets the tone for self-initiated learning in the future. I include
one group project in the second semester as a way to introduce both the beginning aspects of form up to the double period, and the expectation that students will be able to work together in groups. Lastly, both Music Theory 4 and my graduate-level Advanced Analytical Techniques course include projects that ask the student to choose not only the music to be analyzed, but also to find the score and audio themselves, determine and prioritize their own theory topics to discuss, submit a proposal for prior approval, and – in the case of Theory 4 – to select the format in which to present the information: either a written paper, an oral presentation, or a video lecture, aimed at educating either their own Theory 4 colleagues or the concurrent Theory 2 students, depending on the topics examined. These Theory 4 projects are due in two weeks, so I’m looking forward to evaluating them soon. The graduate course’s final project instead requires a written paper presented as an oral presentation with handouts and audio examples, in the style of a professional conference paper. I’ll have to wait until Finals Week to see how those turn out.

I’ve chosen to intentionally alter most of my course designs to incorporate what I’ve learned from this series of creative Group Projects in Form and Analysis. I believe this has led to stronger and more deliberate pedagogy, greater achievement of my course-level student learning objectives, longer-lasting content retention, and an overall more enjoyable classroom experience for my students and for myself.

[Slide 18: Bulleted List again] I’ll return now to my earlier list of practical suggestions for incorporating creative and/or group work into your own courses. Perhaps you disagree with some, or you notice an element that I’ve left out. Clearly any such list will be personal and subjective, but I think we can agree on many of the main points.

I’ve long been puzzled by the fact that I, as a graduate student, once had entrusted to me an entire classroom of unsuspecting students, without any prior experience or training in pedagogy, education, or psychology. (Maybe even throw in some administration or conflict and peace studies for good measure.) In any case, I hope we as a profession can also continue the conversation about the best process for educating educators at the college level, and not simply rely on content mastery and scholarship output as stand-ins for measuring pedagogical abilities.
But back to the topic at hand. Since I know many of you are experienced music educators for whom much of this paper was simply a confirmation of concepts you’ve already tested in your own courses, I would love to hear any questions or suggestions for improvement you may have for me, and perhaps more importantly, even some of your own experiences with similar group and/or open format projects in music courses, whether in music theory or other subdisciplines. Thank you for your time. [Slide 18 End Title; Slide 19 Bulleted List again]