



Minstrels in Middle School: A Study in Adolescents' Self-Perception

As Creative Musicians and Songwriters

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## ABSTRACT

The purpose of this empirical study is to investigate adolescents' perceptions of themselves as creative musicians before and after participation in a curricular songwriting unit. The unit, delivered to middle school chorus students in Central Bucks School District, includes lessons in popular song form, digital music production, lyric writing, and vocal recording. A quantitative survey is administered before and after the unit to identify students' confidence levels in songwriting, attitudes regarding the songwriting and the music production process, and finally the students' perceptions of their abilities to express themselves creatively. Results are compared to determine what changes in students' perceptions due to participation in the songwriting unit.

## Table of Contents

<b>Chapter 1: Introduction.....</b>	<b>1</b>
<b>Chapter 2: Review of Literature .....</b>	<b>2</b>
History and Standards.....	2
On Creativity.....	3
Musical Self-Esteem and the Potential Effect of Composition on Attitude .....	5
Using Vernacular Music and Songwriting.....	7
Advice on Sequencing Group Composition Projects .....	9
Music Production as Music Creation.....	11
<b>Chapter 3: Research Findings .....</b>	<b>13</b>
Impact of COVID-19 .....	13
Method of Research .....	13
General Results .....	15
Results by Question .....	16
<b>Chapter 4: Conclusion.....</b>	<b>21</b>
Key Takeaways.....	21
Possible Explanations .....	21
Applications for Music Teachers .....	23
Future Research .....	23
Reflections on Distance Learning .....	24
Final Thoughts .....	24
<b>Works Cited.....</b>	<b>25</b>

<b>Appendix A: 7<sup>th</sup> Grade Chorus Songwriting Unit Lesson Plans .....</b>	<b>30</b>
<b>Appendix B: Elizabeth Menard’s “Creativity Attitude Survey” .....</b>	<b>40</b>
<b>Appendix C: Attitudes on Musical Creativity in Songwriting and M. Production Survey .</b>	<b>43</b>
<b>Appendix D: Full Survey Results .....</b>	<b>45</b>

## **Chapter 1: Introduction**

The purpose of this empirical study is to investigate adolescents' perceptions of themselves as creative musicians before and after participation in a curricular songwriting unit. The unit, delivered to middle school chorus students in Central Bucks School District, will include lessons in popular song form, digital music production, lyric writing, and vocal recording. A quantitative survey will be administered before and after the unit to identify students' confidence levels in songwriting, attitudes regarding the songwriting and the music production process, and finally the students' perceptions of their abilities to express themselves creatively. Results will be compared to determine possible changes in students' perceptions.

I teach vocal music at a suburban middle school in Pennsylvania in the Central Bucks School District. In May 2019, our spring concert was held earlier than usual, and I was looking for quality instructional materials to use over the last month of school. I had previously taught a unit on pop song form, but I decided that I would try to build upon the activity and have the students write their own songs. One month later, seventy-five 7<sup>th</sup> graders performed original group songs for each other in the school library. I was shocked not just at the quality of the students' creations but also the students' general attitude and positivity.

I am curious as to the kind of impact initial experience in songwriting can have on adolescent students. Do they grow in confidence as musicians? Do they enjoy writing songs? Can incorporating an initial curricular unit in songwriting encourage students to want to pursue future songwriting and compositional opportunities? I hope to answer some of these questions in the proceeding research. Chapter 2 will examine relevant research in the fields of music education and music production. Chapter 3 will discuss the findings of the surveys, and Chapter 4 will draw conclusions about the research.

## Chapter 2: Review of Literature

### History and Standards

Many educators are familiar with the “Four C’s” of critical thinking, communication, collaboration, and creativity. The National Education Association (NEA) has promoted implementation of the “Four C’s” into school curriculums for over a decade (NEA, 2012). In 2014, the National Coalition for Core Arts Standards (NCCAS) published new standards for arts education with a focus on the three “Artistic Processes” of Creating, Performing, and Responding, with an additional focus on Connecting. These standards were created in part to clarify the connections between the arts and 21<sup>st</sup> century skills (NCCAS, 2014).

Within the music education profession itself, a desire to revise the 1994 National Standards was growing in the early part of the millennium. In an article for the *Music Educators Journal*, Reimer (2004) lamented the stagnation of music offerings in American schools. He wrote, “We have succeeded magnificently in Standards 1 and 2, singing and playing, for those students who have elected to pursue those areas...Comparatively, we have accomplished dismayingly little with the other seven standards.” (Reimer, 2004, p. 34). Included in those seven neglected standards were some of the more “creative” musical endeavors of improvising, composing, and arranging music (National Association for Music Education, 2020).

When the NCCAS team of writers convened to rewrite the music standards, they sought to address some of the deficiencies in the 1994 standards (Schuler, 2014). For example, Conway pointed out in the *Music Educators Journal* that some schools believed that if they had a jazz band, then the improvisation standard was being met (Conway, 2008). Likewise, if a music technology class offered composition opportunities, composition did not have to be included in the ensembles. So, when making the new standards, the NCCAS writers sought to stress the



inclusion of creation in every music class (Norgaard, 2014). “Create” was put on equal footing as an Artistic Process with “Perform”. The new standards were broken down into strands which correspond to the various music courses – general music, ensemble, music technology, harmonizing instruments, and composition/theory (National Association for Music Education, 2014). Significantly, even within choirs and instrumental ensembles, there was now an expectation that students not only perform music but create it.

### **On Creativity**

Even if we can agree that music classes and ensembles should include creative activities, there are multiple definitions in the literature as to what “creativity” entails. The word comes from the Latin *creâre* which means “to produce, to foster, to raise, and to create” (Soares, 2016, p.114). Some of the earliest literature comes from Wallas, who sought to conceptualize the creative process. He divided it into four stages: preparation, incubation, illumination, and verification (Wallas, 1926/2014). In the preparation stage, a person purposefully investigates a problem. In the incubation stage, the person has time to subconsciously ruminate, but not consciously think about the problem. Illumination represents the “aha” moment of inspiration. The final stage, verification, involves the refining and shaping of the illumination (Wallas, 1926/2014).

Wallas’ work was admired by music education researcher Webster, who provided a model of creative thinking in music in a special focus issue of the *Music Educators Journal* (Webster, 1990). Webster acknowledges that he was influenced by the work of Guilford, who brought attention to the role of divergent thinking in a “factor-of-intellect” model of human intelligence. In Webster’s model for creative thinking in music, he utilized both the four stages of the creative process and Guilford’s concepts of divergent thinking, while adding that creative

thought in music is dependent on additional factors. He labeled these “enabling skills”, and “enabling conditions.” For Webster, enabling skills were aptitudes, extensiveness, flexibility, originality, tonal imagery, rhythmic imagery, syntax, craftsmanship, conceptual understanding and aesthetic sensitivity. The enabling conditions were motivation, subconscious imagery, environment, and personality. Each of these factors was associated with divergent thinking, convergent thinking, or both. Webster articulated that the result of creative thought in music was composition, performance, or analysis (Webster, 1990).

Much of the significant research considers creativity from a social perspective. Csikszentmihalyi says that creativity results from the interaction of three elements: “a culture that contains symbolic rules [domain], a person who brings novelty into the symbolic domain, and a field of experts who recognize and validate the innovation” (Csikszentmihalyi, 1996). Using the example of music, *domain* could be music theory, instrumental technique, standard compositional practice, rhythmic style, etc. The *person* is the individual who makes a change or innovation in context of the domain – e.g. a variation on the standard blues progression. The *field* could be represented by other musicians, potentially professional musicians, teachers, or peers. Csikszentmihalyi affirms that one may not be able to do something truly creative unless they have some previous knowledge of the status quo. He uses the analogy, “one needs to know music to write a creative symphony” (Csikszentmihalyi, 1988). It is worth noting however that Csikszentmihalyi’s model for creativity is most often applied to adults, not children (Soares, 2016). Csikszentmihalyi generally addresses what he refers to as “capital C” Creativity – “the kind that changes some aspect of the culture” (Csikszentmihalyi, 1996).

Some recent authors have contrasted the “traditional” notion of Creativity (capital C) with the “new” concept that likens creativity more to the process of imaginative thinking (Boden,

1990/2004; Savage & Fautley 2007). Odena and Welch (2016, p. 30) state, “Within this latter [new] concept, creativity is defined as imagination successfully manifested in any valued pursuit”. In this sense, an adolescent student can be creative if, having learned four chords on the ukulele, arranges the chords in such a way that she creates a progression that is new *to her*. In this philosophy, it would not matter if that same progression had already been used thousands of times by other musicians.

Webster (2002) provides a definition of musical creativity which incorporates the imaginative thinking concept, saying that creativity in music is “the engagement of the mind in the active, structured process of thinking in sound for the purpose of producing some product that is new for the creator” (Webster, 2002). He states that the term “creativity” is not useful because it is misused, and the term “creative thinking” falls closer in line with what people really understand as creativity.

Among the various philosophies, we can identify some common threads when trying to articulate creativity. There is the notion that creativity is a process that leads to a product, but not simply a single “aha” moment of inspiration. Creative work is the product of previous experience, time, and refinement. There is also importance placed on making changes and innovations in context of an environment. That environment could consist of personal previous knowledge, commonly accepted practice, or perceptions of experts in the field. Finally, the individual must be making changes that result in something new to the creator.

### **Musical Self-Esteem and the Potential Effect of Composition on Attitude**

Schmitt (1979) developed a measure of self-esteem in music which she used with adolescents, dubbed *Self-Esteem of Musical Ability* (SEMA). Commenting on Schmitt (1979), Draves (2008, p. 36) states that “[Self-esteem of music ability] consists of self-confidence,

musical ability, and positive reinforcement from parents, teachers, and friends.” Using SEMA, Schmitt discovered that there was a positive relationship between music participation, achievement, and musical self-esteem.

Sanders and Browne (1998) conducted a study to determine which factors contributed most to a person’s music self-concept. They determined that “the strongest relationship to music self-concept was the enjoyment of making music” (Draves, 2008, p. 37).

Studies have been conducted measuring the effect of composition activities on attitude among students in music classes, although most of them focus on instrumental classes. Robinson (1974) conducted an experiment using fifth grade band students and divided them into a control group, which received no instruction time in composition, and an experimental group, which was given instructional time in composition. He found significant positive differences in music interest and achievement in the experimental group. Riley (2006) led a similar study, again using a control and experimental group with middle school band students:

In the area of student attitude toward music and instrumental music learning, the experimental group responded more favorably from pretest to posttest than did the control group to the Instrumental Music Attitude Inventory statements. This suggests that the students enjoyed the addition of music composition activities to music performance and listening activities in their band classes.” (Riley, 2006, p. 34).

Menard (2011) conducted two studies involving a high school band and Talented Music Program which measured changes in student attitudes about composition and director attitudes about inclusion of composition activities in the curriculum. She found that in the high school band class, student attitudes and confidence in composition increased significantly between pre

and post instruction. Significant changes were not observed in the Talented Music Program, perhaps because these students were more familiar with composition activities prior to the study.

### **Using Vernacular Music and Songwriting**

Many researchers are encouraging the use of songwriting as a compositional medium - particularly with adolescents. Kratus (2013, p. 268) writes “For most young people the words “music” and “songs” are synonymous. The music world of adolescents is a landscape of songs”. Continuing, he says:

“Songwriting is a form of composition that is especially suitable for inclusion in music curricula for middle school, high school, and college students...(1) it attracts an underserved school population of musicians who play guitar, keyboard, or electronic instruments; (2) it satisfies the expressive, emotional, and creative needs of adolescents and young adults; (3) it connects to adolescents’ musical cultures while expanding their horizons to other musical cultures; and (4) it is a sustainable skill that can be easily carried on and developed further outside of school” (Kratus, 2013, pg. 268).

Kratus sees the song as an accessible entry point for reaching young students because songs are such a large part of their everyday lives.

Woody & Adams (2019) discuss the importance of including what they term “vernacular music” in school music curriculum, which includes rock, pop, country, hip-hop and other non-classical genres. They explain that the term “*pop*” represents a specific genre, while “vernacular music is not defined by any music stylistic qualities; rather, it is defined by its wide appeal among people, especially the general public with little or no formal music training” (Woody & Adams, 2019, p. 2). They state that perhaps the greatest benefit of including vernacular music making into school curriculums is the advancement of ear-based musicianship, which can

contribute to skills in improvising, listening, memorizing, and performing. They also stress the benefit of students “experiencing the small-group collaborative processes that are characteristic of vernacular musicianship” (Woody & Adams, 2019, p. 5).

Laiho (2004) discusses the role that music plays for adolescents from a psychological perspective. She argues that music assists in the following developmental tasks: maintaining the emotional field, formation of identity, formation of interpersonal relationships, and providing feelings of agency [capability]. Upon reviewing research in the use of songwriting and group composition, we find evidence that affirms her categorization.

McGillen & McMillan (2005) conducted inquiry-based research on a secondary music ensemble including twenty-one students grades 8-12. The basis of the ensemble was that all the music must be original. The songs and tunes had to be created by the group or individuals in the group. Over a period of weeks, students were asked about their opinions of the class and about the benefits of collaborative songwriting, composition, and performance. The researchers determined that participation in the group contributed to a sense of belonging, student identity construction, relationships between members, cooperation, and socio-musical engagement (McGillen & McMillan, 2005).

Davis (2005) conducted qualitative research on a three-part rock band and noted some of the implications that vernacular music-making can have on young people. She notes:

“One of the most significant findings that resulted from this study was the role that music played in the construction of *identity*...For the members of *Our Delay*, playing music is more than for the purpose of a concert or festival award. The process or journey of playing meaningful music is more important than the actual outcome. Music serves as a

vehicle to inform their world of feelings and emotions” (Davis, 2005, under “Identity...” para. 10).

Draves conducted a mixed-methods study on music achievement, self-esteem, and aptitude in a college songwriting class for non-music majors (Draves, 2008). Investigations of journals kept by the students over the semester were analyzed and coded, and the following themes emerged: personal desire/interest, support/recognition from others, and perceived music ability. Draves observed positive growth from the start of the course to the end in each of the following criteria: Advanced Measures of Music Audiation, Self-Esteem of Musical Ability, and ratings of subjects’ original compositions (Draves, 2008). Although this study used older students, the results yielded similar themes of identity and feelings of agency among participants in the class. A similar study was conducted by Riley (2012), who found that songwriting impacted student personal development and served as a medium for self-expression.

### **Advice on Sequencing Group Composition Projects**

Often in middle school, composition projects are delivered in the form of group projects (Rusinek, 2016). Vygotsky (1978) states that when working in groups, classmates operate in a “zone of proximal development.” He argues that students can function at higher levels when surrounded by more experienced peers than they would alone. A common question among teachers when assigning group projects is whether students should be allowed to pick their own groups. In terms of composition projects, Miell & MacDonald (2000) found that students demonstrated higher levels of focus and created more successful musical products when there was friendship among group members.

Fautley (2005) provides us with a model of the group composition process which can be used to guide instruction in songwriting and general composition. This model was developed

specifically with lower secondary students in mind. He breaks down group composition projects into an initial stimulus and pre-generative phase followed by seven numbered steps:

- *Stimulus* – e.g. the composition guidelines for the project provided by the teacher.
  - *Pre-generative phase* – students bring in their previous musical knowledge, aesthetic awareness, and repertoire of composing techniques.
1. *Initial confirmatory phase* – students explore their ideas and discuss them verbally.
  2. *Initial stage of music generation* – students start to experiment with chords, musical genres, mood, etc.
  3. *Manipulation of musical material* – students form the musical structures into melodies, chord progressions, etc.
  4. *Refinement work on piece* – songs or pieces are practiced and refined.
  5. *Trial performance and refinement* – songs/pieces are performed for peers or teacher in a casual or formal setting, feedback is provided.
  6. *Preparation for final performance* – students rehearse and take feedback into account; add final touches.
  7. *Final performance* – students perform their song/piece, either via live performance for students or teacher, or via recording or some other medium.

This model provides a strong foundation with which to format and sequence activities from a curricular standpoint.

Webster (2016) provides a strong argument for the importance of revision in composition and for the role of the teacher as one who can and should provide feedback and suggestions during the composition process. He affirms that the revision stage is included as a necessary part



of the compositional process in most of the research on composition. He provides the following suggestions for teachers in encouraging revision of student works:

1. Give ourselves agency.
2. Encourage improvisational thinking as a partner with creating original music-making.
3. Listen, perform, and discuss music.
4. Teach the formal properties of music at the appropriate time.
5. Establish a climate for revision.
6. Ask children about how they are or have been revising.
7. Have children discover on their own.
8. Build over time.

### **Music Production as Music Creation**

Due to the availability of affordable, high-powered, and accessible recording and music editing software such as GarageBand, Logic Pro, Ableton, Pro Tools, Audacity, Soundtrap, and Studio One, young people have perhaps more opportunity than ever to write, record, and produce their own songs. These tools, called digital audio workstations (DAWs) help to remove a main barrier of entry to songwriting by making it easy to experiment with chord progressions and loops. Even people who have no previous instrumental experience can string loops together in a digital audio workstation and create a song.

Traditionally, when using the term “music production”, we are referring to a three-part process including pre-production, production, and post-production. “Pre-production involves preparing for a session by setting up technical equipment (microphones, mixing desks and recording apparatus) and musical (drum kit) instruments. Production is the actual recording, and post-production the modification and balancing of the recorded track.” (King & Vickers, 2007, p.

62). However, as production software becomes more accessible to songwriters and composers, and as creative decisions are made within the production process (particularly with pop/vernacular music), the line between production and music creation is increasingly blurred. Tobias (2013, p. 215) states, “Given the creative processes and decisions involved in producing popular music, and the increasing role that shaping sound through digital means playing in creating a wide range of popular music, producing can be seen as a way of composing or creating music.”

### **Chapter 3: Research Findings**

#### **Impact of COVID-19**

The scale of this research was reduced due to the impact of the SARS-CoV-2 virus. I had originally planned to survey 7<sup>th</sup>-grade chorus students at three middle schools in the Central Bucks School District. Lessons would have included some instrumental instruction (ukulele, piano) and live group collaboration and rehearsal time. However, due to school closures and the necessity for each teacher to tailor a plan for distance learning, I was only able to conduct research in my home school. I also had to adapt the songwriting unit to be delivered entirely via distance learning. Luckily, the Spotify company was at the time offering free class subscriptions to Soundtrap, an online collaborative digital audio workstation. The music production aspects of this project were added due to the necessity of distance learning; however, the Soundtrap software proved effective in enabling students to create their own songs collaboratively online.

In Central Bucks, class time for specialist teachers was reduced so that students could focus on the academic courses. We saw each class period a total of five times - every other week for one hour of synchronous instruction on Microsoft Teams video chat followed by one hour of asynchronous instruction. The songwriting unit was broken down into five lessons covering the following topics: pop song form, using Soundtrap, writing lyrics, recording vocals, and post-production (Appendix A). Sixty-two students in 7<sup>th</sup> grade chorus classes completed the songwriting unit over distance learning and filled out both the pre-project survey and the post-project survey.

#### **Method of Research**

To gather my research, I created an 18-question survey modeled on the “Creativity Attitude Survey” of Menard (2011) (Appendix B). Menard’s study focused on traditional music

composition (including notation) in instrumental high school classes. Her 16-question survey was administered before and after instruction in composition, and included questions such as:

- “I feel secure in attempting to compose music.”
- “I think I could learn to compose.”
- “Composition is a way to creatively express my feelings through music.”

For the “Attitudes on Musical Creativity in Songwriting and Music Production Survey” (Appendix C) it was necessary to adapt Menard’s questions to specifically reference songwriting and music production rather than composition. Some questions were altered slightly for clarity.

For example:

- “I feel confident in attempting to create my own music.”
- “I think I could learn to write songs.”
- “Creating songs is a way that I can personally express my feelings through music.”

Two additional questions were added that did not directly correspond to Menard (2011). They were Question #1, “I think that I can use music to express my thoughts and feelings in a creative way,” and Question #18, “I enjoy creating songs.” Because Question #1 was an addition, Question #2 in the “Attitudes on Musical Creativity in Songwriting and Music Production Survey” corresponds to Question #1 in Menard (2011). This pattern continues through Question #17.

A 5-point Likert scale was used for student responses. Options consisted of “Strongly Agree,” “Agree,” “Undecided,” “Disagree,” and “Strongly Disagree.” Of the 18 questions, 11 were framed with positive wording. For example, Question #2 reads, “I enjoy expressing my thoughts and feelings through music.” Seven of the 18 questions were framed with negative wording. For example, Question #6 reads, “I am no good at creating songs.” When analyzing

data, each response was weighted with a corresponding number that identified a student's feeling of positivity. For a positive-leaning question, if a student responded "Strongly Agree," they were given a positivity factor ( $p$ ) of +2 for that question. If they responded "Disagree," for that same question, they were given a positivity factor of -1 for that question. Negative-leaning questions were reverse-weighted. If a student responded "Strongly Agree" to a negative-leaning question, they were given -2. If they responded "Disagree" to that same question, they were given a positivity factor of +1.

### General Results

The attitude factors of student responses were totaled for all 18 questions and 62 students to provide a general rating of attitude regarding songwriting and composition before and after the curricular unit (see Appendix D for full results). In the pre-project survey, sum attitude amounted to  $\sum a = 610$ . To put this in context, had every student responded to each question with maximum positive responses,  $\sum a$  would equal 2,232. Had every student responded with maximum negative responses,  $\sum a$  would equal -2,232. If every student responded "Undecided" to each question,  $\sum a$  would equal 0. The pre-survey results totaling to  $\sum a = 610$  tells us that students began the songwriting unit with generally positive opinions on songwriting and music production and their capacity to participate successfully. In terms of percentages, students responded with 63.7% of the maximum possible attitude.

The total attitude factor of all students in the post-survey amounted to  $\sum a = 772$ . This shows that upon completion of the curricular unit, student positivity regarding songwriting and music production slightly increased. In percentages, students responded with 67.3% of the maximum positivity. Upon calculation we can determine a total difference of change ( $\sum c$ ) amounting to  $\sum c = 162$  and a percentage increase of 3.6%.

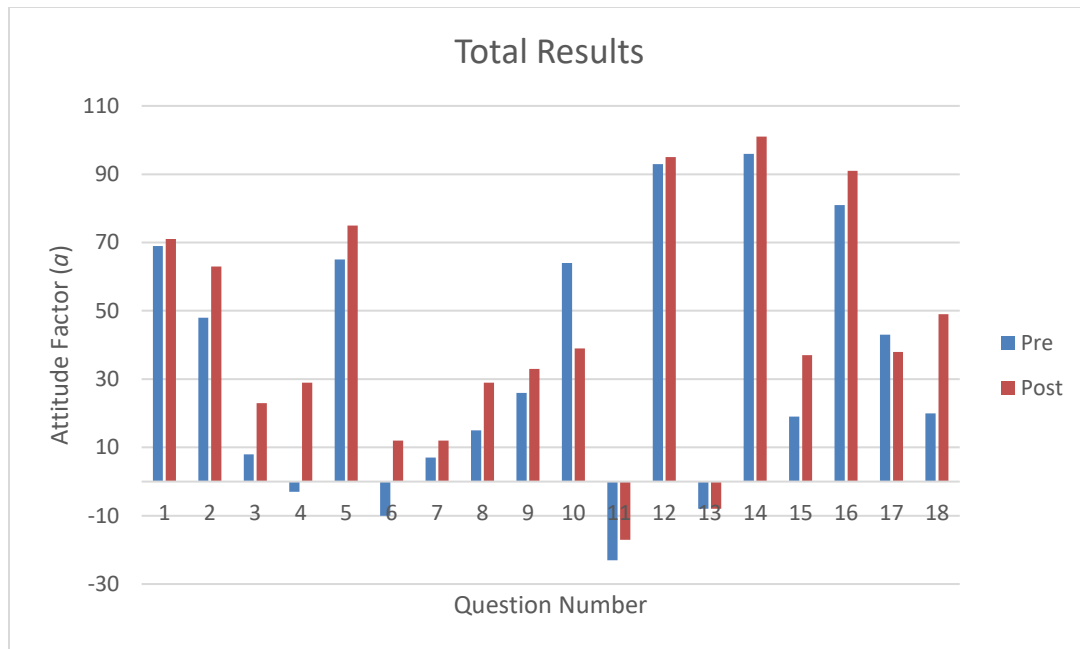


Figure 1

## Results by Question

### *Positive to More Positive*

The following list consists of questions in which student responses were initially positive, and post-test responses revealed a further increase in positivity.

1. I think that I can use music to express my thoughts and feelings in a creative way.

( $a=69$  pre-survey to  $a=71$  post-survey)

2. I enjoy expressing my thoughts and feelings through music. ( $a=48$  pre to  $a=63$  post)

3. I feel confident in attempting to create my own music. ( $a=8$  pre to  $a=23$  post)

5. I think I could learn to write songs. ( $a=65$  pre to  $a=75$  post)

7. I am not the type of person to do well in songwriting and music production.

( $a=7$  pre to  $a=12$  post)

8. I can handle most musical tasks, but writing songs and producing music seems too much for me. ( $a=15$  pre to  $a=29$  post)

9. Creating new music does not scare me. ( $a = 26$  pre to  $a = 33$  post)
12. I admire anyone who can write and/or produce their own songs. ( $a = 93$  pre to  $a = 95$  post)
14. Songwriting and music production are wastes of time. ( $a = 96$  pre to  $a = 101$  post)
15. The idea of creating songs makes me feel uneasy and confused. ( $a = 19$  pre to  $a = 37$  post)
16. It is impossible to express personal feelings through music. ( $a = 81$  pre to  $a = 91$  post)
18. I enjoy creating songs. ( $a = 20$  pre to  $a = 49$  post)

Twelve of the total 18 survey questions fall into this category, which tells us that students display a positive attitude about the songwriting and production process, enjoy creating songs themselves, and feel a degree of self-confidence in their capacity to learn how to write and produce songs successfully.

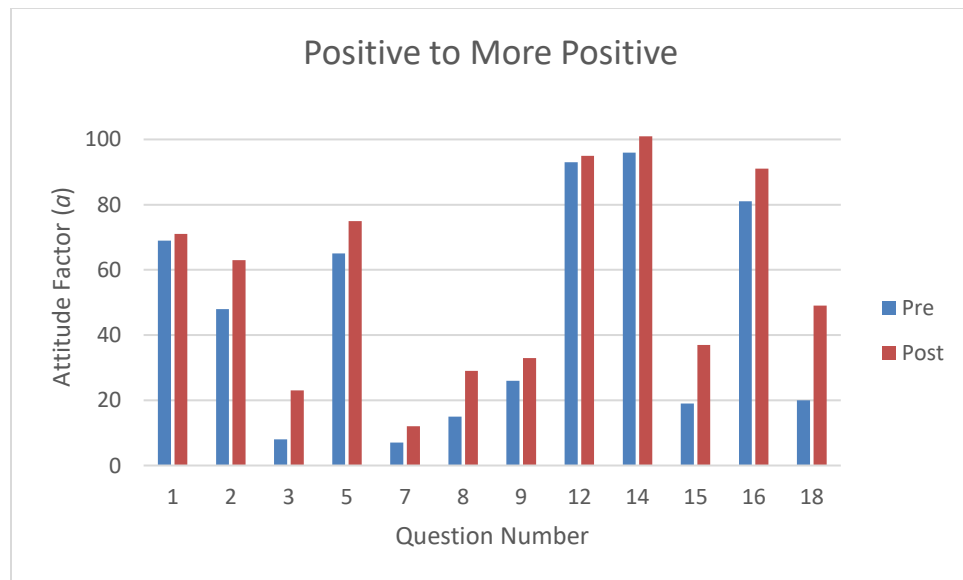


Figure 2

### *Negative to Positive*

In the following two questions, students responded negatively in the pre-project survey, but responded positively post-project.

4. I am sure that I could write a quality song. ( $a = -3$  pre to  $a = 29$  post)

6. I am not good at creating songs. ( $a = -10$  pre to  $a = 12$  post)

Post-project, we see a marked change in student self-confidence in their current ability to write and produce songs successfully.

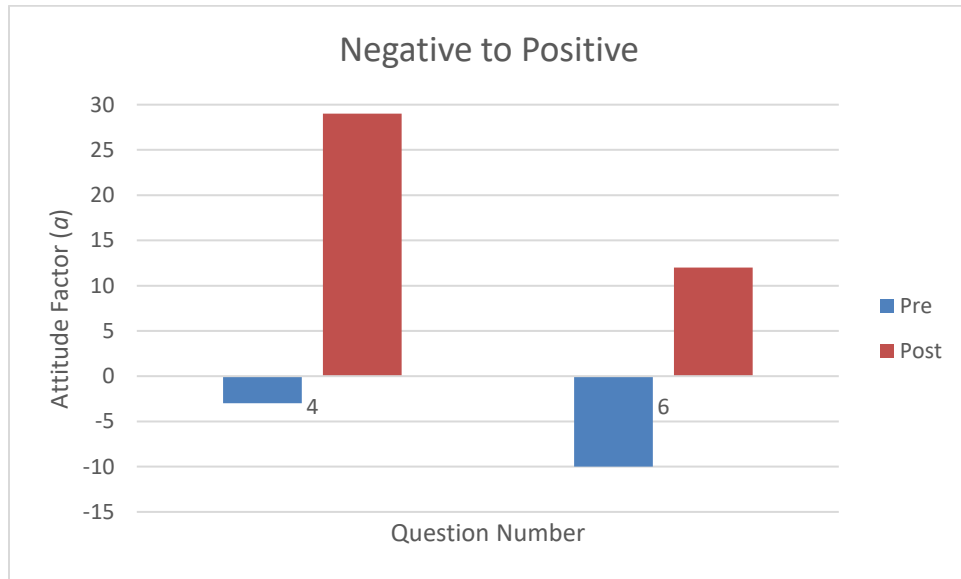


Figure 3

### *Consistently Negative*

In the following two questions, students responded negatively in both the pre-project survey and the post-project survey.

11. It would embarrass me to have people hear the music I create. ( $a = -23$  pre to  $a = -17$  post)

13. I would like for people to hear the music I create. ( $a = -8$  pre to  $a = -8$  post)

There was a slight majority opinion that students did not wish to have their songs shared publicly. Interestingly, in Question #11 there is still improvement from  $a = -23$  pre-survey to  $a = -17$  post. In Question #13, because the initial data showed no change, we can observe the simple responses (ignoring whether a student put Strongly Agree or Strongly Disagree) to determine the number of students who responded either negatively, positively, or undecided. Pre-survey, 30 students responded undecided, 13 positively, and 19 negatively. Post-survey, 26 students



responded undecided, 16 positively, and 20 negatively. So, slightly more students responded positively to Question #13 post-survey.

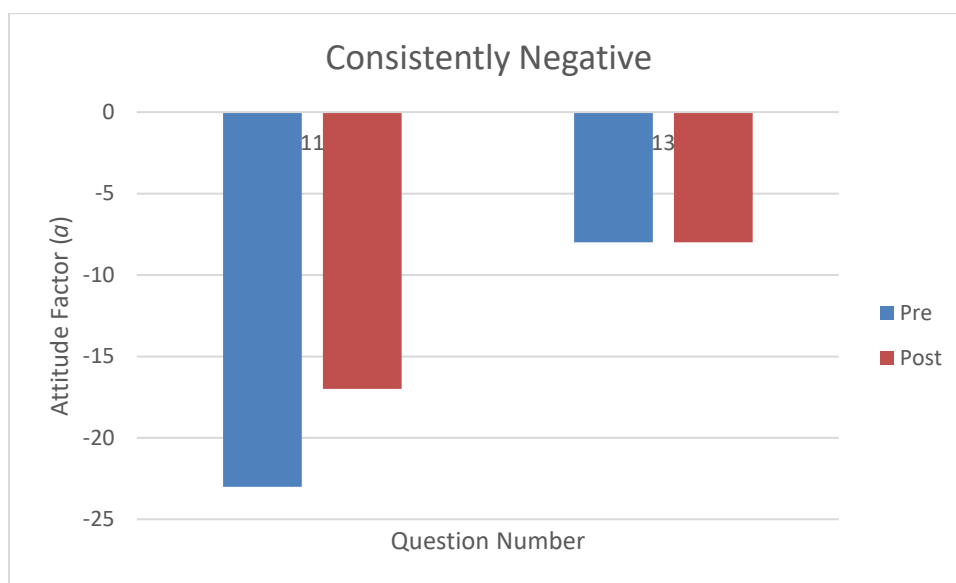


Figure 4

#### *Positive to Less Positive*

In the following two questions, students responded positively in both surveys, but displayed decreased positivity from pre-survey to post-survey.

10. I would like to learn how to write and/or produce my own songs.

( $a = 64$  pre to  $a = 39$  post)

17. Creating songs is a way that I can personally express my feelings through music.

( $a = 43$  pre to  $a = 38$  post)

There was a noticeable decrease in willingness to learn how to write and produce songs.

Students may feel that they sufficiently learned the material. A slight decrease in student attitude is observed in Question #17, though only by five points. Significantly though, we can determine that a single curricular songwriting unit may not sufficiently equip students with the tools that would enable them to feel more confident expressing their feelings through song.

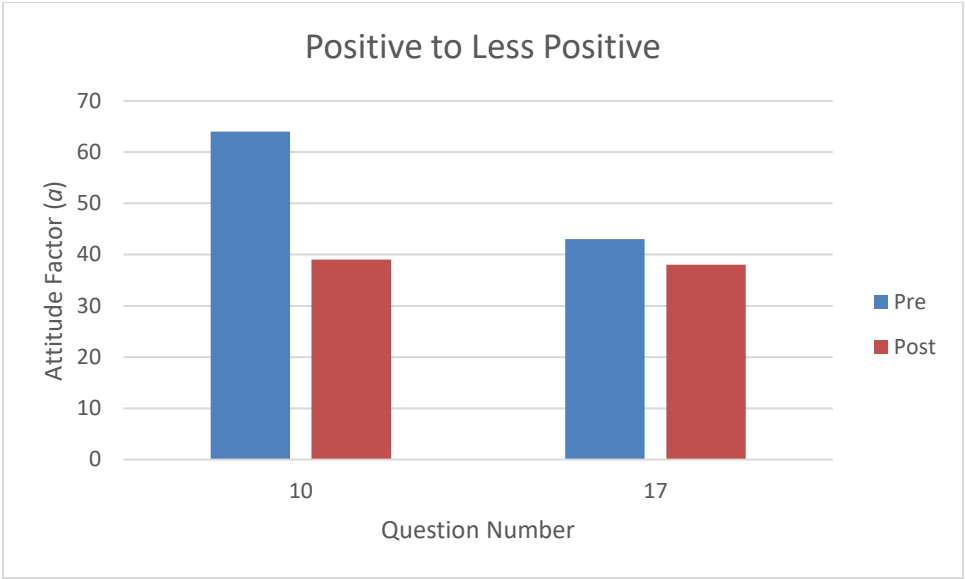


Figure 5

## Chapter 4: Conclusion

### Key Takeaways

The results of the survey indicate that there is a positive correlation between student attitude and confidence in songwriting and music production after participation in a relevant curricular unit. However, the positivity correlation is small when viewed as a total percentage increase (63.7% to 67.3%). We can identify certain areas in which the positivity increase is most pronounced; particularly, in Questions #4, #6, #15, and #18. We can identify other areas in which there is decreased positivity (Questions #10 and #17). Significantly, students seem to have positive opinions of the art of songwriting, express confidence in their personal abilities in music creation, and express enjoyment in the songwriting process. This is true both before and after participation in the songwriting curricular unit. One area in which students consistently expressed negativity regarded having their songs shared publicly.

### Possible Explanations

#### *Total Percentage Increase*

I was initially surprised to see a percentage increase of only 3.6% in positive attitude from pre to post survey. I attribute this partially to the fact that students responded so positively to the initial pre-survey and to the simple nature of the Likert scale. If a student answered “Agree” to a certain question, they were very likely to answer “Agree” again in the second survey unless their opinions were significantly changed. However, if a student answered “Undecided” in the pre-survey, they were more likely to have a changed opinion in the post-survey. Only 311 “Undecided” responses were recorded in the pre-survey out of the possible 4,464 responses, or about 7%. Thus, there may have been less total room for positive improvement because student attitudes were so high pre-survey.

*Decreased Positivity in Questions #10 and #17*

Students responded less positively to Question #10 and Question #17 post-project. Question #10 regarded willingness to learn how to write and produce songs. Upon review, it makes sense that students would show decreased desire to learn about songwriting immediately following a unit in songwriting. Students may feel as if they already learned everything they need to know, or that they do not wish to learn any more at this time. Question #10 may need rewording or reformatting in future research.

Question #17 regarded student capacity to express themselves creatively through song creation. It was disappointing to see the attitude factor decrease for this question from pre to post project. The hope was that students would feel they had been given sufficient tools in which to use song creation as a means of self-expression. Students did still display positive attitude; just slightly less than they did pre-project (a change from  $a=43$  to  $a=38$ ). Through study, students may have become more aware of the technical aspects of the art which can prove to be hurdles in the process of self-expression through music creation. Both songwriting and music production involve proficiencies in music theory, instrumental/vocal performance, music technology, poetry/lyric writing, and other aspects. It is likely that students gained an appreciation for the difficulty inherent to the process. As previously stated, a single curricular songwriting unit may not sufficiently equip students with the tools that would enable them to feel more confident expressing their feelings through song. It is possible that continued long-term instruction in songwriting and music production may improve student's perception of their capacity to express themselves using the art form.

## **Applications for Music Teachers**

### *Songwriting Projects are Both Valuable and Enjoyable*

As a profession, especially with the adoption of the 2014 National Core Arts Music Standards, we have agreed to the importance of incorporating creative and compositional projects in various types of music classes, including performance ensembles. Furthermore, most students enjoy making their own music (Question #18) and see value in the process (Question #14). These factors provide clear justification to include songwriting projects in the curriculum, yet many teachers still struggle to incorporate songwriting lessons. This could be due to a lack of confidence in delivering songwriting instruction at the teacher level, or perhaps due to the pressure of performance seasons (Menard, 2011). Regardless, it is encouraged for teachers to find ways to incorporate songwriting lessons into their curricula.

### *Public Music Sharing*

Students responded negatively to questions regarding willingness to have their songs shared publicly (Questions #11, #13). Teachers should consider this when pursuing future songwriting and production projects. Although performance and music sharing can be extremely valuable for students, and many students will want to have their songs heard, it is possible that mandated music sharing can create negative experiences for certain students. Teachers may wish to make music sharing an optional choice at the end of the project in situations where the performance aspect is not one of the primary instructional objectives.

## **Future Research**

This research focused on the implementation of songwriting curricula with middle school choral students. Songwriting is a natural fit for the choral student because choral students are generally more comfortable singing and dealing with texts. Songs are the native art form of the

choral student. Similar research has been conducted using composition activities, often with instrumental students (e.g. Menard, 2011; Riley, 2006). Future research may be conducted using songwriting as the medium rather than traditional instrumental composition in ensemble classes. Alternatively, future research could focus on using songwriting in general music classes at various grade levels. Regarding Question #17, studies could be conducted observing the effects of continued long-term instruction in songwriting and music production on student perception of their ability to express themselves creatively. This instruction could take place over a year or over a series of years.

### **Reflections on Distance Learning**

Due to school closures, this entire project was delivered via distance learning. Having students collaborate on group projects without being able to interact in person proved difficult. For legitimate reasons, some students dropped out of the project without finishing. Frequent tech support was required, and as a teacher, I had to step in often to help students connect with “MIA” group members. That said, I am ultimately very impressed and proud of my students’ accomplishments in creating well-written, well-produced, and unique songs. The Soundtrap software enabled students to collaboratively work together and chat in a way the sufficiently replicated a live classroom setting, and I would recommend it as a tool for songwriting projects.

### **Final Thoughts**

I am reassured and excited to discover that middle school aged students genuinely enjoy creating their own music, have confidence in their creative capacities, show respect for the art form, and can succeed at pursuing creative music making. In order to provide more students with the tools they need for self-expression, it is my hope that music curricula can expand from an elementary through secondary level to consistently include creative music projects.

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**Appendix A:**7<sup>th</sup> Grade Chorus Songwriting Unit Lesson PlansLESSON #1: Popular Song FormObjectives:

- Students will be able to define the primary components of popular song form, including Verse, Chorus, Pre-chorus, and Bridge.
- Students will be familiar with additional components of song form including Intro, Interlude, Solo, Rap, and Outro.
- Students will be able to listen to and evaluate pop songs and create color-coded lyric sheets that show the song form.
- Students will complete the “Attitudes on Musical Creativity in Songwriting and Music Production Survey” using Microsoft Forms.
- Students will identify potential group members by listing students they are comfortable working with on a private form.

National Core Arts Standards:

*MU:Cr2.1.C.IIb:* Describe and explain the development of sounds and musical ideas in drafts of music within a variety of simple or moderately complex forms (such as binary, rondo, or ternary).

Required Software: Microsoft Teams, Word, PowerPoint, and Forms; Canvas, YouTube.

Time Allotted: 1 hour of synchronous instruction followed by 1 hour of asynchronous work

Procedures:

1. Meet via Microsoft Teams; share, view, and discuss the “Pop Song Form” PowerPoint.

2. Listen to relevant song examples that demonstrate the various sections of Pop Song Form. Pause the recordings at various locations and ask the students to identify the section. Discuss in detail the characteristic or identifying traits of each song section.
3. Listen to the song “Life is a Highway” by Rascal Flatts, and in real-time create a color-coded lyric sheet that breaks down the song into its form components. This can become the example template for students to analyze future songs.
4. Provide a Microsoft Forms link for students to fill out the “Attitudes on Musical Creativity in Songwriting and Music Production Survey”.
5. Provide a Microsoft Forms link for students to list their choices for potential group members.

Assessment:

- In the asynchronous work hour, students will create color-coded song form analysis lyric sheets for two teacher-selected songs.
- Students will submit completed work to the Canvas online classroom for grading/individual feedback.

LESSON #2: Introduction to Soundtrap and Topic and Title BrainstormObjectives:

- Students will be able to define the primary components of popular song form, including Verse, Chorus, Pre-chorus, and Bridge.
- Students will be able to access Soundtrap software through a link provided on the Canvas page.
- Students will understand how to perform basic functions in Soundtrap like inputting loops, starting and stopping playback, inviting collaborators, using the chat, setting the cursor to a measure number, changing the length of a loop, and using copy and paste.
- Students will demonstrate their understanding of functions in Soundtrap by creating 32-measure arrangements in ABAB form.
- Students will complete the “Topic and Title Brainstorm” to think of potential subjects for their songs.

National Core Arts Standards:

*MU:Cr2.1.C.IIa:* Assemble and organize multiple sounds or musical ideas to create initial expressive statements of selected sonic events, memories, images, concepts, texts, or storylines.

*MU:Cr2.1.T.Ia:* Select melodic, rhythmic, and harmonic ideas to develop into a larger work using digital tools and resources.

Required Software: Microsoft Teams and Excel, Canvas, and Soundtrap DAW with class subscription

Time Allotted: 1 hour of synchronous instruction followed by 1+ hour of asynchronous work

Procedures:

1. Via Teams, review examples of correct song analysis sheets from previous week.
2. Instruct students to go to the Canvas page. Give them their official group assignments (groups of 2-3 people).
3. Instruct students to all follow the Canvas link to Soundtrap software. This will automatically register them in the online Soundtrap classroom. Have one leading group members start a collaborative project and invite group members and the teacher.
4. Using screen share, provide a walkthrough tutorial of the Soundtrap studio and its basic functions. Demonstrate how to input loops, start and stop playback, use the chat, set the cursor to a measure number, change the length of a loop, and use copy and paste.
5. In real-time, create an example 32-measure arrangement in ABAB form using loops. Review the meaning of ABAB form. Encourage students to include percussion and at least two other instrument tracks. The A and B sections can be thought of as a potential Verse and Chorus.
6. Provide students with a template for “Topic and Title Brainstorms” in Microsoft Excel. Each group must think of five potential topics for their songs, then within each topic, list three potential titles. Provide examples by filling in a teacher version of the document.

Assessment:

- In the asynchronous hour, students (now in their groups) will create their own ABAB 32-measure arrangements.
- The teacher can provide feedback right within Soundtrap chat.
- Students will complete “Topic and Title Brainstorm” excel documents for submission.

LESSON #3: Techniques for Lyric Writing and Progression in SoundtrapObjectives:

- Students will understand common rhyme schemes used in lyrics and poetry.
- Students will have a cursory understanding of “common meter” in lyric writing (referring to a 4, 3, 4, 3 stress syllable pattern).
- Students will continue to develop their Soundtrap arrangements using loops, adding at least an intro and outro. Students should determine which sections will be Verse and Chorus, and decide if they want to include Pre-choruses, a Bridge, or any additional sections.

National Core Arts Standards:

*MU:Cr2.1.C.IIa:* Assemble and organize multiple sounds or musical ideas to create initial expressive statements of selected sonic events, memories, images, concepts, texts, or storylines.

*MU:Cr2.1.T.Ia:* Select melodic, rhythmic, and harmonic ideas to develop into a larger work using digital tools and resources.

Required Software: Teams, Canvas, Soundtrap, Musicnotes Now website

Time Allotted: 1 hour of synchronous instruction followed by 1+ hour of asynchronous work

Procedures:

1. Via Teams, explain that students will be writing lyrics this week. Go to <https://www.musicnotes.com/now/tips/enhance-your-songwriting-with-these-rhyming-schemes/>
2. Read through the various examples of different rhyme schemes.
3. Explain how “common meter” is used in lyric writing as another potential tool. Provide examples.



4. Allow students to choose a random topic. Write lyrics on the spot pertaining to that topic for students to use as an example. Make sure that it rhymes, but it does not necessarily have to be in common meter. Students should assist whenever possible coming up with rhyming verses. You will need Verse 1, Chorus, and Verse 2 lyrics.
5. Go to Soundtrap (while doing a screen share). Arrange a song on the spot using loops that contains an Intro, Verse 1, Chorus, Verse 2, Chorus, an Outro. Do not record yet, but in real-time, rap the lyrics of the created song while playing the Soundtrap recording. Adjust the length of sections as needed in Soundtrap to fit with the lyrics, demonstrating the process to students as you go. This song will function as example for what their Soundtrap projects should look like by next class.

Assessment:

- In groups, students must finish arranging the “bones” of their Soundtrap songs. At a minimum, the song should include sections Intro, Verse 1, Chorus, Verse 2, Chorus, and Outro. Pre-choruses and bridges are optional. No vocals need to be recorded yet.
- In groups, students should choose one of the titles from their “Topic and Title Brainstorm” activities. Using that title as a foundation, they must write lyrics for Verse 1, Chorus, and Verse 2 of their songs. Other sections are optional. Encourage students to pick and use a rhyme scheme. Remind them that they may elect to use common meter if they so choose. Neither rhyme nor common meter are mandatory.
- Lyric sheets should be submitted through Canvas. Provide feedback for Soundtrap projects within the Soundtrap chat.

LESSON #4: Recording Vocals and Individual Feedback MeetingsObjectives:

- Students will create raps and/or melodies for their Soundtrap songs.
- Students will successfully record the vocal tracks into Soundtrap.
- Students will refine their Soundtrap arrangements and apply teacher feedback.

National Core Arts Standards:

*MU:Cr2.1.E.1a:* Select and develop draft melodies, rhythmic passages, and arrangements for specific purposes that demonstrate understanding of characteristic(s) of music from a variety of historical periods studied in rehearsal.

*MU:Cr3.1.T.1a:* Drawing on feedback from teachers and peers, develop and implement strategies to improve and refine the technical and expressive aspects of draft compositions and improvisations.

Required Software: Teams, Canvas, Soundtrap

Time Allotted: 25 minutes of synchronous instruction followed by 15-minute group meetings.

At least one hour of asynchronous work.

Procedures:

1. Via Teams, explain that students will be creating melodies/raps and recording vocals this week, and explain that you will meet with each individual group for 15 minutes on Teams (send Teams calendar invites out in advance).
2. Through screen share, pull up the lyrics and the Soundtrap file used as an example in the previous class.

3. Demonstrate the process for recording vocals. Click “Add New Track”, turn the reverb down, check computer microphone settings, use headphones, and record. Record a rap and melody for the example song.
4. Explain the importance of using headphones and talk about what reverb is and how can affect the sound.
5. Show students how you can copy, paste, and edit vocal tracks just like loops. Encourage them to record in chunks.

Assessment:

- Schedule and meet with each individual Soundtrap group to review their project files. Check to confirm that they have an Intro, Verse 1, Chorus, Verse 2, Chorus, and Outro at a minimum. Provide feedback as needed.
- Encourage students to rap if they are not comfortable singing. They can also use a combination of rapping and singing.

LESSON #5: Post-Production and SharingObjectives:

- Students will understand how to add pan and volume automations in Soundtrap.
- Students will refine their Soundtrap arrangements and apply teacher feedback.
- Students will be able to export an MP3 file from Soundtrap.
- Students will submit their final MP3 recordings to be posted on the Canvas class discussion board.
- Students may provide positive or constructive feedback for peers' recordings.
- Students will complete the "Attitudes on Musical Creativity in Songwriting and Music Production Post-Project Survey"

National Core Arts Standards:

*MU:Cr3.1.C.1a:* Identify, describe, and apply teacher-provided criteria to assess and refine the technical and expressive aspects of evolving drafts leading to final versions.

*MU:Cr3.2.T.1a:* Share compositions or improvisations that demonstrate a proficient level of musical and technological craftsmanship as well as the use of digital tools and resources in developing and organizing musical ideas.

Required Software: Teams, Canvas, Soundtrap

Time Allotted: 25 minutes of synchronous instruction followed by 15-minute group meetings.

At least one hour of asynchronous work.

Procedures:

1. Explain that students will be submitting the final versions of their song for posting on the class discussion board. Students may elect to keep their song private.

2. Through screen share, pull up the example song. Explain what it means to “pan” a track.  
Demonstrate how you can pan certain tracks left or right.
3. Explain and demonstrate how you can adjust volume by using volume automations and by doubling tracks (particularly the vocal track).
4. Show students how to Export and MP3 from Soundtrap, then show them where to submit their final MP3 in Canvas.
5. Instruct students to complete the “Attitudes on Musical Creativity in Songwriting and Music Production Post-Project Survey”

Assessment:

- Schedule and meet with each individual Soundtrap group to review their project files.  
Make sure that they have all of their vocals recorded. Provide final suggestions.
- After applying teacher feedback, students will submit their final MP3s for grading and to be posted on the class discussion board.
- Students may listen to their peers’ recordings and leave positive or constructive comments in the discussion board.

**Appendix B:**

## Elizabeth Menard's "Creativity Attitude Survey"

Administered to high school band students

Directions: Please circle the appropriate response to each question below. Your name is required for research tracking, but all responses will be kept confidential. Your honest response is requested and will be most valuable to me for planning future lessons and understanding your feelings about music and music composition. A comment section following each question will allow you to provide a more detailed response about your feelings, if you wish. Your classroom teacher will see the overall results of the survey, but will not see your individual responses.

1. I enjoy expressing my thoughts and feelings through music performance. Strongly Agree

Agree      Undecided      Disagree      Strongly Disagree

Comments:

2. I feel secure in attempting to compose music.

Strongly Agree      Agree      Undecided      Disagree      Strongly Disagree

Comments:

3. I am sure that I can write a good composition.

Strongly Agree      Agree      Undecided      Disagree      Strongly Disagree

Comments:

4. I think I could learn to compose.

Strongly Agree      Agree      Undecided      Disagree      Strongly Disagree

Comments:

5. I am no good at composing music.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
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Comments:

6. I am not the type to do well in music composition.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
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Comments:

7. I can handle most musical tasks, but music composition would be a problem.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
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Comments:

8. Composing music does not scare me.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
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Comments:

9. I would like to learn how to compose music.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
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Comments:

10. It would embarrass me to have people hear the music I compose.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
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Comments:

11. I admire anyone who can compose music.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
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Comments:

12. I would like for people to hear the music I compose.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
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Comments:

13. Composing is a waste of time.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
----------------	-------	-----------	----------	-------------------

Comments:

14. Composition makes me feel uneasy and confused.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
----------------	-------	-----------	----------	-------------------

Comments:

15. It is impossible to express personal feelings through music.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
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Comments:

16. Composition is a way to creatively express my feelings through music.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
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Comments:



### Appendix C:

#### Attitudes on Musical Creativity in Songwriting and Music Production Survey

Administered to 7<sup>th</sup> grade chorus students via distance learning

The purpose of this survey is to assess attitude and confidence levels regarding your own musical creativity in songwriting and music production. This survey will be administered before and after a curricular unit in songwriting and music production. All names will be kept completely confidential.

1. I think that I can use music to express my thoughts and feelings in a creative way.

Strongly Agree      Agree      Undecided      Disagree      Strongly Disagree

2. I enjoy expressing my thoughts and feelings through music.

Strongly Agree      Agree      Undecided      Disagree      Strongly Disagree

3. I feel confident in attempting to create my own music.

Strongly Agree      Agree      Undecided      Disagree      Strongly Disagree

4. I am sure that I can write a quality song.

Strongly Agree      Agree      Undecided      Disagree      Strongly Disagree

5. I think I could learn to write songs.

Strongly Agree      Agree      Undecided      Disagree      Strongly Disagree

6. I am not good at creating songs.

Strongly Agree      Agree      Undecided      Disagree      Strongly Disagree

7. I am not the type of person to do well in songwriting and music production.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
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8. I can handle most musical tasks, but writing songs and producing music seems too much for me.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
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9. Creating new music does not scare me.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
----------------	-------	-----------	----------	-------------------

10. I would like to learn how to write and/or produce my own songs.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
----------------	-------	-----------	----------	-------------------

11. It would embarrass me to have people hear the music that I create.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
----------------	-------	-----------	----------	-------------------

12. I admire anyone who can write and/or produce their own songs.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
----------------	-------	-----------	----------	-------------------

13. I would like for people to hear the music I create.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
----------------	-------	-----------	----------	-------------------

14. Songwriting and music production are a waste of time.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
----------------	-------	-----------	----------	-------------------

15. The idea of creating songs makes me feel uneasy and confused.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
----------------	-------	-----------	----------	-------------------

16. It is impossible to express personal feelings through music.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
----------------	-------	-----------	----------	-------------------

17. Creating songs is a way that I can personally express my feelings through music.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
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18. I enjoy creating songs.

Strongly Agree

Agree

Undecided

Disagree

Strongly Disagree

**Appendix D:**

## Full Survey Results

<b>PRE- SURVEY</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>Sum Attitude Per student</b>
Student 1	1	1	0	0	1	-1	0	0	-1	1	-2	2	-2	1	1	1	1	0	4
Student 2	2	1	1	0	2	1	2	1	1	1	0	2	1	2	1	2	2	1	23
Student 3	1	1	-1	-1	0	-1	0	0	1	0	-1	1	0	1	0	1	0	0	2
Student 4	1	1	0	0	1	0	0	0	-1	1	-2	2	-2	2	0	2	1	1	7
Student 5	1	2	1	0	2	1	0	1	1	2	1	1	1	2	1	2	1	2	22
Student 6	2	2	2	2	2	1	1	2	2	2	1	1	2	2	2	2	2	2	32
Student 7	1	-1	1	-1	2	0	1	1	1	2	-1	2	1	2	0	2	1	0	14
Student 8	2	1	0	0	1	-1	0	0	0	1	0	2	0	2	1	1	1	0	11
Student 9	1	2	-2	-2	2	1	-2	2	-2	2	1	2	1	2	-2	2	0	0	8
Student 10	1	1	-1	-1	1	-2	-2	-2	0	1	0	2	0	1	0	1	0	1	1
Student 11	1	0	-1	0	1	-1	-1	-2	0	1	-2	2	-1	1	-1	0	-1	-1	-5
Student 12	1	0	0	0	1	0	0	1	1	1	-1	2	0	2	1	2	1	0	12
Student 13	1	1	1	0	2	0	1	0	1	1	-1	2	0	2	1	1	0	0	13
Student 14	1	0	1	-1	1	0	0	-1	1	1	-1	1	-1	2	1	1	1	1	8
Student 15	1	0	-1	0	1	-1	0	0	-1	1	-1	1	0	1	-1	2	1	0	3
Student 16	1	0	2	2	2	-2	0	-2	2	2	2	2	2	0	0	0	0	2	15
Student 17	-1	0	-1	-1	1	-2	0	-1	-1	1	-2	1	-1	1	-1	-1	-1	-1	-10
Student 18	2	1	0	0	1	0	0	0	1	1	-1	1	0	1	0	2	0	1	10
Student 19	1	1	2	1	1	1	1	2	2	1	0	1	0	1	1	1	-1	1	17
Student 20	0	1	1	1	1	0	0	1	0	1	0	2	0	1	1	1	1	0	12
Student 21	1	1	0	-1	-1	-2	0	1	1	2	-2	2	-1	2	0	1	1	0	5
Student 22	1	1	-1	-1	1	-1	-1	-1	-1	0	0	1	-1	1	-1	0	0	-1	-4
Student 23	1	0	0	0	1	1	1	0	1	1	0	1	1	2	1	1	0	0	12
Student 24	1	1	-1	-2	1	-2	-2	-1	-1	1	-1	1	-1	1	-1	2	0	0	-4
Student 25	2	2	1	0	1	0	2	2	2	2	0	2	1	2	2	2	2	0	25
Student 26	1	0	0	0	2	0	0	0	0	1	-1	2	0	2	-1	2	1	0	9
Student 27	1	-1	0	1	1	0	-1	-1	1	1	-2	1	-1	2	-1	2	-1	0	2
Student 28	1	1	-1	-1	0	-1	-1	0	1	0	0	1	-1	2	0	2	-1	0	2
Student 29	2	2	2	2	2	2	2	2	2	2	1	1	1	2	2	-2	2	2	29
Student 30	1	1	-1	0	1	0	0	-1	0	-1	-1	1	-1	1	-1	1	1	-1	0
Student 31	1	1	0	0	1	0	1	1	1	1	0	1	0	2	1	2	1	0	14
Student 32	2	2	2	1	2	1	2	1	2	2	0	2	0	2	2	2	2	2	29
Student 33	1	0	0	0	1	0	1	0	-1	1	0	2	0	2	-1	2	1	0	9
Student 34	1	1	2	0	2	1	2	0	2	1	0	2	0	1	0	2	0	0	17
Student 35	2	1	1	2	2	1	0	1	1	2	0	2	0	2	1	2	2	1	23
Student 36	1	1	0	-1	1	-2	-2	-2	0	2	-2	2	-2	2	-1	2	2	0	1
Student 37	-1	1	-1	0	1	0	1	1	2	1	-1	1	0	1	0	2	0	1	9
Student 38	1	1	-1	0	1	0	-1	0	1	1	0	2	0	2	1	2	1	0	11
Student 39	2	2	1	1	2	1	2	2	2	2	1	2	2	2	2	2	2	2	32
Student 40	2	2	0	0	1	0	-2	0	0	1	0	2	0	2	1	2	1	0	12
Student 41	2	1	1	1	2	1	2	2	2	2	2	2	2	2	2	-2	2	2	28

Student 42	1	1	1	0	1	1	1	1	1	1	0	1	0	1	1	2	1	1	16
Student 43	2	1	2	1	1	0	1	1	1	1	-1	2	1	2	1	2	1	1	20
Student 44	0	1	-2	0	1	-2	-2	0	-1	1	-2	2	-1	2	0	2	0	0	-1
Student 45	1	1	1	1	1	0	0	1	1	1	0	2	0	1	1	2	1	0	15
Student 46	1	1	-1	0	0	0	0	0	-1	1	-1	2	0	2	0	2	1	0	7
Student 47	1	0	-1	-1	1	-1	0	-2	-1	1	-1	2	-1	2	0	2	0	-1	0
Student 48	1	0	1	1	1	0	0	1	1	0	1	1	-1	1	1	1	0	0	10
Student 49	1	0	0	0	1	-1	-1	0	1	0	0	1	0	1	0	-2	0	0	1
Student 50	2	1	1	0	1	0	0	0	1	0	-1	1	-1	1	1	2	1	0	10
Student 51	1	0	-2	-2	-2	-2	-2	-1	-2	-1	-2	2	-2	1	-1	0	0	-1	-16
Student 52	1	0	-1	-1	0	0	0	0	0	-1	0	1	0	2	-1	1	1	0	2
Student 53	1	-1	-1	-1	1	0	-1	1	0	1	-2	0	-2	1	-1	1	1	-1	-3
Student 54	1	1	0	-1	0	-1	0	0	0	1	1	1	0	1	1	1	0	0	6
Student 55	1	1	1	0	1	0	1	1	1	1	0	1	0	2	1	2	1	1	16
Student 56	1	1	0	0	1	0	1	1	-1	2	1	2	0	2	0	2	2	0	15
Student 57	1	1	0	0	1	0	0	1	0	0	0	1	0	1	0	2	0	0	8
Student 58	1	0	1	0	1	1	1	0	-1	2	1	2	0	2	1	1	1	0	14
Student 59	1	1	0	0	1	1	1	0	0	2	-2	2	0	2	1	2	1	1	14
Student 60	2	2	0	0	1	1	1	1	1	2	0	1	1	2	0	1	1	1	18
Student 61	1	0	-1	-1	1	-1	-1	-1	-1	0	1	1	-2	1	-1	1	1	0	-2
Student 62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Per question</b>	69	48	8	-3	65	10	7	15	26	64	23	93	-8	96	19	81	43	20	<b>610</b>

POST-SURVEY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	Sum Attitude Per student
Student 1	1	1	1	1	1	-2	-1	-1	1	0	-2	2	1	2	1	1	0	1	8
Student 2	1	2	1	1	2	1	1	1	1	2	0	2	1	2	1	2	2	1	24
Student 3	1	2	-1	0	1	-2	-1	-1	0	1	-1	2	-1	1	-1	2	0	0	2
Student 4	2	2	2	1	1	1	1	1	1	1	0	2	0	2	1	2	2	2	24
Student 5	1	2	1	1	2	0	1	1	2	2	1	1	1	2	1	2	1	2	24
Student 6	2	1	2	2	2	2	2	2	-1	2	1	1	1	2	2	2	1	2	28
Student 7	2	2	1	1	2	1	1	2	2	2	1	2	1	2	1	2	2	2	29
Student 8	1	1	-1	0	1	-1	1	-1	1	1	0	2	-1	1	0	2	1	0	8
Student 9	0	2	0	1	2	0	-1	1	0	-1	-2	2	-2	2	0	-2	-1	2	3
Student 10	2	1	0	0	1	-2	-1	-1	0	1	-1	2	0	2	1	-2	1	1	5
Student 11	0	1	-1	0	2	-1	-1	-2	-1	1	-2	2	-1	2	-2	2	0	0	-1
Student 12	1	1	1	0	2	0	1	1	1	0	-1	2	-1	2	1	2	1	1	15
Student 13	1	1	1	1	2	1	1	1	1	0	1	2	0	2	1	2	0	1	19
Student 14	1	0	-1	1	2	0	1	1	0	-1	-1	2	0	2	0	2	0	1	10
Student 15	1	1	1	1	1	1	0	1	1	0	-1	0	1	1	1	1	1	1	13
Student 16	2	1	2	2	2	2	-2	2	2	2	2	2	2	1	1	1	1	2	27
Student 17	0	0	0	-1	1	-1	-1	-1	0	-1	-1	1	-1	1	0	1	-1	0	-4
Student 18	1	0	0	1	1	-1	0	0	1	1	-2	2	0	2	1	2	0	1	10
Student 19	2	0	1	-1	2	1	1	1	2	0	1	1	0	1	1	2	-1	2	16
Student 20	1	2	1	1	1	0	0	1	1	0	1	2	0	1	1	2	2	1	18
Student 21	2	1	1	-1	0	-1	0	1	2	2	-2	2	0	2	0	2	2	2	15
Student 22	0	1	-2	-2	0	-2	-1	-1	0	-1	-1	2	-1	1	0	1	-1	-1	-8
Student 23	0	-1	0	0	1	1	-1	2	1	1	-2	2	-2	1	1	1	-2	1	4
Student 24	1	1	-2	-1	0	-2	-1	-1	-1	1	0	1	-1	1	-1	2	1	-1	-3
Student 25	2	2	1	1	2	0	1	2	1	2	0	2	0	2	1	2	2	2	25
Student 26	1	1	0	0	1	1	0	0	1	0	-1	1	0	2	0	2	1	1	11
Student 27	1	0	1	1	1	1	-1	-1	0	1	-1	1	0	2	1	2	-1	0	8
Student 28	0	1	-1	-1	-1	-1	-1	0	1	0	0	0	-1	2	0	1	0	-1	-2
Student 29	2	2	1	2	2	1	1	1	1	1	0	2	0	2	1	2	1	1	23
Student 30	0	0	-1	0	1	0	0	-1	0	-1	0	1	0	1	-1	1	-1	0	-1
Student 31	2	2	2	1	1	1	0	1	1	0	0	2	0	2	1	2	1	2	21
Student 32	2	2	2	1	1	1	2	1	2	1	0	2	1	2	2	2	2	2	28
Student 33	2	1	2	1	2	1	1	2	2	2	0	2	-1	2	1	2	1	1	24
Student 34	1	1	1	0	1	1	1	0	1	1	1	2	1	1	1	2	1	1	18
Student 35	1	1	0	1	2	1	0	1	-1	0	-2	2	-2	2	0	2	0	1	9
Student 36	2	1	1	0	1	0	-1	1	1	2	-2	2	-2	2	0	2	2	0	12
Student 37	1	1	-1	1	1	1	-1	2	1	-1	0	0	1	1	1	1	0	0	9
Student 38	1	1	1	1	2	0	0	1	2	1	0	2	0	2	1	2	1	1	19
Student 39	2	2	2	2	2	1	2	2	0	2	0	2	2	2	1	2	2	2	30
Student 40	2	1	1	0	1	0	1	1	1	1	1	1	1	1	1	2	1	1	18
Student 41	2	2	1	1	2	0	2	1	1	2	2	2	2	2	1	2	2	2	29
Student 42	1	1	1	1	2	1	1	1	1	1	1	1	0	2	1	2	1	1	20
Student 43	2	2	1	1	2	1	0	1	2	1	-1	1	0	2	1	2	1	1	20
Student 44	0	0	-1	-1	0	1	-2	-1	0	0	-2	2	-1	1	0	2	0	0	-2
Student 45	1	1	1	1	2	1	1	2	1	1	1	2	1	2	2	2	-1	1	22
Student 46	1	1	0	0	1	1	1	1	1	2	0	2	0	2	0	2	2	1	18

Student 47	1	1	-1	0	0	1	-1	1	-1	-1	-2	2	-2	2	1	1	1	1	4	
Student 48	1	-1	0	1	1	0	1	0	-1	-1	0	1	-1	1	1	1	-1	-1	2	
Student 49	1	1	0	1	1	0	0	1	1	0	0	2	0	1	1	2	1	1	14	
Student 50	2	1	0	1	1	0	0	0	1	0	0	2	-1	2	1	2	1	1	14	
Student 51	0	0	-2	-1	-1	-2	-2	-1	-2	-1	-2	1	-2	2	-2	-1	-1	-1	-18	
Student 52	2	2	1	1	2	-1	-1	1	1	0	-1	2	1	2	2	2	2	2	20	
Student 53	1	1	-1	-1	1	-1	-1	-2	0	1	-1	2	0	2	1	2	0	0	4	
Student 54	1	1	1	1	1	0	1	0	-1	1	0	1	0	1	1	1	1	1	12	
Student 55	1	1	1	1	1	1	1	1	1	0	1	2	1	1	1	1	1	1	18	
Student 56	2	1	1	1	1	1	1	1	-1	0	1	1	0	2	1	1	1	1	16	
Student 57	1	1	0	1	0	0	1	0	1	0	1	1	-1	1	1	1	0	0	9	
Student 58	1	1	1	1	2	1	1	1	-1	1	1	1	0	1	1	1	1	1	16	
Student 59	1	1	-1	0	1	1	1	0	-1	1	-2	2	0	2	0	-2	1	0	5	
Student 60	2	2	0	0	1	1	1	0	-1	2	0	1	0	2	1	2	1	1	16	
Student 61	-1	-1	-1	-1	1	-1	-1	-1	-1	1	0	1	-2	1	-1	1	-1	-1	-8	
Student 62	0	0	1	0	1	1	2	-1	1	0	1	-2	0	1	-1	1	0	-2	3	
Per question	71	63	23	29	75	12	12	29	33	39	-	17	95	-8	101	37	91	38	49	772
Positivity change per question																				
	2	15	15	32	10	22	5	14	7	25	-	6	2	0	5	18	10	-5	29	162

<b>Positivity Change per Student (c)</b>	
Student 1	4
Student 2	1
Student 3	0
Student 4	17
Student 5	2
Student 6	-4
Student 7	15
Student 8	-3
Student 9	-5
Student 10	4
Student 11	4
Student 12	3
Student 13	6
Student 14	2
Student 15	10
Student 16	12
Student 17	6
Student 18	0
Student 19	-1
Student 20	6
Student 21	10
Student 22	-4
Student 23	-8
Student 24	1
Student 25	0
Student 26	2
Student 27	6
Student 28	-4
Student 29	-6
Student 30	-1
Student 31	7

Student 32	-1
Student 33	15
Student 34	1
Student 35	-14
Student 36	11
Student 37	0
Student 38	8
Student 39	-2
Student 40	6
Student 41	1
Student 42	4
Student 43	0
Student 44	-1
Student 45	7
Student 46	11
Student 47	4
Student 48	-8
Student 49	13
Student 50	4
Student 51	-2
Student 52	18
Student 53	7
Student 54	6
Student 55	2
Student 56	1
Student 57	1
Student 58	2
Student 59	-9
Student 60	-2
Student 61	-6
Student 62	3
<b>TOTAL</b>	<b>162</b>