Teaching Body Mapping in the Orchestra Classroom

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Lee Honors College Thesis

Teaching Body Mapping in the Orchestra Classroom

Principal Investigator: Dr. David S. Smith

Student Investigator: Gretchen Clemans

Western Michigan University
Abstract

For young string musicians, it is easy to fall into the habit of playing with improper body alignment and unhealthy technique. In response, this study investigates the ways in which the teaching of healthy body techniques can be taught in the orchestra classroom, in order to prevent students from experiencing pain, tension, and muscle strain while studying their instrument. Overall, the results from the research group of students showed that over half of the students have experienced pain while playing their instrument. Furthermore, the results indicated that students responded positively to the content presented. After being introduced to the material, the participating students indicated that they had strategies to consult if pain arose during or after they played their instrument.

Introduction

By the time student musicians reach the university level, many of them have or will have experienced pain, tension, or a playing-related injury. As a string student, much of the information about posture and body positioning can be lost in the wake of attempting to understand the basic mechanics of the instrument, technical demands of the music, and understanding the deeper musical elements embedded in the literature. With everything else that occurs in a regular school day, it is a challenge to accurately teach students about body awareness and how to prevent injury. Unfortunately, these lessons are also difficult to incorporate into a method book and therefore are not often found in the many resources students may consult for more information about their instrument.

One of the main techniques musicians and other performing artists negotiate for aid in the re-teaching of healthy body positioning and techniques is the Body Mapping Technique,
developed by William and Barbara Conable in the 1970s (Johnson, 2009, p. 16). According to an article found on the website for those who practice and teach the Body Mapping Technique,

“Body Mapping is the conscious correcting and refining of one’s body map to produce efficient, graceful, and coordinated movement. The body map is one’s self-representation in one’s own brain, one’s assumptions or conception of what one’s body is like, in whole or part. If our representation is accurate, movement is good. If our representation is faulty, movement suffers. When our map is corrected, the movement improves” (Nesmith, 2001).

The problem, however, is that this technique is often studied by musicians who are at the university level and above. Thus, it is not often brought to a degree of understanding for children, especially in a classroom setting. Therefore, this study aims to discover concrete ways in which Body Mapping can be successfully incorporated into the in-school music curriculum, specifically within the orchestra classroom.

**Methods and Materials**

This study took place in the orchestra classroom at Wayland Union High School and was comprised of teaching three, 30-minute lessons during the Symphony Strings class period (7:40-8:39 am). The first lesson took place on March 22\textsuperscript{nd}, the second on March 26\textsuperscript{th}, and the third on March 27\textsuperscript{th}.

Prior to teaching the lessons, each student completed a pre-lesson questionnaire via Google Forms (see Appendix B). Furthermore, the thirty students who participated in the study were video recorded before the lessons began in order to document their playing technique and posture before learning about the Body Mapping Technique. The students were also required to
submit a permission slip, documenting their consent to participate, be recorded, and have their questionnaire data analyzed. If the student was under the age of 18, parental consent was also required (see Appendix A).

The information in each lesson was presented via a power point and an interactive lecture. Each lesson included objectives, movement activities, and stretches, along with some of the main facets from the Body Mapping Technique. Additionally, each lesson was video recorded for further analysis and reference.

The goal of Lesson One, “Body Mapping Basics”, was to introduce the students to the Body Mapping Technique, common Body Mapping terms, simple strategies for pain and tension, proper breathing technique, and stretches that can be done before and after playing (see Appendix D). Additionally, the students were also presented with the idea that musicians are a form of athletes and are just as prone to injury as those who play sports on a regular basis.

In Lesson Two, “Posture Boot Camp”, the students learned about aligned sitting technique, common issues that arise while sitting, general string instrument positioning, and ways in which good posture can be challenged in everyday life (see Appendix E). During the lesson, the students also reviewed the information and stretches learned in Lesson One.

The third and final lesson, “Common Issues (and How to Fix Them)”, addressed many of the postural issues that string players may face and presented movement activities to help fix them (see Appendix F). This lesson incorporated the use of anatomical models and pictures to better explain the postural issues and the anatomy of the human body.

After completion of the lessons, all participating students were asked to complete a Post-Lesson Questionnaire in order to gain their feedback on the lessons (see Appendix C).
Additionally, the Post-Lesson Questionnaire incorporated the four main questions found on the Pre-Lesson Questionnaire in order to assess the effectiveness of the study overall.

Data collection occurred in two distinct ways: the questionnaires, and video recording before and during the teaching of the lessons. Initially, the students were also going to be video recorded after the lessons in order to analyze if a change in body positioning had occurred. This step was omitted, however, due to time conflicts and constraints that occurred with the school schedule. In the Pre-Questionnaire, students were asked to provide their grade, instrument, and information about their experience with pain during and after playing their instrument. Additionally, students were asked about their strategies for dealing with pain when it occurs during and after playing. These responses were based upon a Likert scale and all given a numerical value (1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree). In the Post-Questionnaire, students were asked the same or similar questions to the questionnaire: their grade, instrument, experience with pain during and after playing, and the strategies they have to deal with pain when it arises during and after playing. In addition, the students were asked if they felt that the lessons were beneficial to the study of their instrument and would be beneficial for other orchestra students their age.

After completing the teaching of the three lessons, all data – videos and questionnaires – were complied and analyzed in order to draw conclusions about the effectiveness of the study overall.
Results

Questionnaire Data

In the Pre-Questionnaire, approximately 63.33% of the students reported having experienced pain while playing their instrument. 33.33% of the students who participated agreed to having re-occurring pain, tension, or muscle strain while playing their instrument. Contrastingly, 20% of the students were neutral, 30% of the students disagreed, and 16.67% of the students strongly disagreed. When asked if the students had re-occurring pain, tension, and muscle strain after playing their instrument, 13.33% of students agreed, 6.67% of the students responded neutral, 36.67% of the students disagreed, and 43.33% of the students strongly disagreed.

Then, the students were asked about their strategies for dealing with pain, tension, and muscle strain. 16.67% of students agreed to having strategies for dealing with pain, tension, or muscle strain if it happened while they were playing their instrument. Conversely, 20% of the students responded “neutral”, 36.67% of the students disagreed, and 26.67% of the students strongly disagreed. When asked if they had strategies to deal with pain, tension, and muscle strain after playing their instrument, 23.33% of students agreed, 36.67% of students were neutral, 23.33% of students disagreed, and 16.67% of students strongly disagreed.

In the Post-Questionnaire, students re-answered the four main questions found in the Pre-Questionnaire. 16.67% of the students who participated agreed to continue having re-occurring pain, tension, or muscle strain while playing their instrument, while 10% of the students were neutral, 46.67% of the students disagreed, and 26.67% of the students strongly disagreed. When asked if the students continued to have re-occurring pain, tension, and muscle strain after playing
their instrument, 10% agreed, 10% were neutral, 43.33% disagreed, 33.33% strongly disagreed, and 3.33% did not respond.

Then, the students were asked if they now had strategies for dealing with pain, tension, and muscle strain after having learned about the Body Mapping Technique. 26.67% strongly agreed to having strategies for dealing with pain, tension, and muscle strain while playing their instrument, while 60% agreed, 10% were neutral, and 3.33% did not respond. When asked if the students had strategies for dealing with pain, tension, and muscle strain after playing their instrument, 30% strongly agreed, 53.33% agreed, and 16.67% were neutral.

The students were then asked whether or not they thought the study was beneficial for the study of their instrument. 23.33% strongly agreed, 53.33% agreed, 20% were neutral, and 3.33% did not respond. Additionally, the students were asked whether or not they thought that the lessons would be beneficial for other orchestra students their age. 16.67% of the students strongly agreed, 50% agreed, 23.33% were neutral, and 10% disagreed.

The end of the post-questionnaire also included four short answer questions to assess how the students felt about the teaching strategies, things that they would want to change, things that they enjoyed, and other constructive comments. The most common aspect that the students enjoyed was learning about the stretches presented in the first lesson and how to do them. In addition, the students enjoyed the incorporation of anatomy with the models and pictures, as well as learning about posture, body alignment, and methods for dealing with pain. Of the constructive comments, the most common appeared to be related to making the lessons more interactive and in depth. Furthermore, some of the students felt that the power point slides were too word-heavy and the third lesson could be split into two. Other students felt that the lessons may be better suited for a younger group of students.
### Pre-Questionnaire Statistical Results

<table>
<thead>
<tr>
<th></th>
<th>Mean Response</th>
<th>Median Response</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have re-occurring pain, tension, or muscle strain while playing my instrument.</td>
<td>2.7</td>
<td>3</td>
<td>1.1</td>
</tr>
<tr>
<td>I have re-occurring pain, tension, or muscle strain after playing my instrument.</td>
<td>1.9</td>
<td>2</td>
<td>1.01</td>
</tr>
<tr>
<td>I have strategies for dealing with pain, tension, or muscle strain if it occurs while I’m playing my instrument.</td>
<td>2.27</td>
<td>2</td>
<td>1.03</td>
</tr>
<tr>
<td>I have strategies for dealing with pain, tension, or muscle strain if it occurs after I play my instrument.</td>
<td>2.67</td>
<td>3</td>
<td>1.01</td>
</tr>
</tbody>
</table>

**Key:** 1= Strongly Disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly Agree

Table 1. Statistical data based upon the numerical values attributed to the responses students gave on the Pre-Lesson Questionnaire.

### Post-Questionnaire Statistical Results

<table>
<thead>
<tr>
<th></th>
<th>Mean Response</th>
<th>Median Response</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>I continue to have re-occurring pain, tension, or muscle strain while playing my instrument.</td>
<td>2.17</td>
<td>2</td>
<td>0.93</td>
</tr>
<tr>
<td>I continue to have re-occurring pain, tension, or muscle strain after playing my instrument.</td>
<td>1.97</td>
<td>2</td>
<td>0.99</td>
</tr>
<tr>
<td>I have strategies for dealing with pain, tension, or muscle strain if it occurs while I’m playing my instrument.</td>
<td>4.17</td>
<td>4</td>
<td>0.59</td>
</tr>
<tr>
<td>I have strategies for dealing with pain, tension, or muscle strain if it occurs after I play my instrument.</td>
<td>4.14</td>
<td>4</td>
<td>0.67</td>
</tr>
<tr>
<td>I found the three lessons that Ms. Clemens taught to be beneficial for the study of my instrument and my participation in orchestra.</td>
<td>4.03</td>
<td>4</td>
<td>0.67</td>
</tr>
<tr>
<td>I feel that other orchestra students my age would benefit from learning this information.</td>
<td>3.73</td>
<td>4</td>
<td>0.85</td>
</tr>
</tbody>
</table>

**Key:** 1=Strongly Disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly Agree

Table 2. Statistical data based upon the numerical values attributed to the responses students gave in the Post-Lesson Questionnaire.
Video Recording Observations

Data was also collected via the video recordings made before and during the lessons. In the pre-lesson video, many of the students were observed with forward head posture and resting their backs on the back of the chair in a slouched position. Other than this, however, the pre-lesson video did not offer any other vital information.

Unfortunately, recording of the first lesson did not begin until about halfway through and observations of the beginning of the lesson could not take place. Instead, the video began at the end of the segment about breathing and the beginning of the stretching segment. The stretching segment of the video showed a high amount of student participation, even though some of the stretches were not clearly explained enough. In the video of the second lesson, the students were observed correcting their posture during the segment that discussed proper sitting techniques. During this video, there were more students who were not engaged in the content and talking to their friends, rather than listening. In the final lesson video, it was clear that students lost their ability to engage with the content as the lesson progressed. There was a lot of material to cover in this lesson, so it seemed to be rushed and not well executed. In both the second and third lesson, there was not a lot of time for the students to review the stretches.

Discussion

As expected, over half of the students who participated in the study reported in their Pre-Questionnaire that they have experienced pain while playing their instrument. This is not surprising, due to the demanding nature of string instrument positioning, technique, and literature. However, this question was also exceedingly vague. Although intentional, it did not account for the possibility that the students’ cause for pain may not have been due to poor
TEACHING BODY MAPPING IN THE ORCHESTRA CLASSROOM

posture and body alignment, and instead could have been caused by another factor. For this reason, the questions that followed it were more specific and aimed to represent the long-term effects of improper body positioning and alignment over time. Surprisingly, only 33.33% of the participating students agreed to having re-occurring pain, tension, or muscle strain while playing their instrument, while 20% were neutral, 30% disagreed, and 16.67% strongly disagreed. Despite the fact that other causes for pain while playing were not accounted for in the initial question, it was expected that more students would have agreed that they experienced re-occurring pain, tension, or muscle strain while playing their instrument. Furthermore, 43.33% of the students strongly disagreed and 36.67% disagreed to having experienced re-occurring pain, tension, and muscle strain after playing their instrument. It was initially expected that these numbers would be lower than the question addressing pain, tension, or muscle strain while playing, however it was much more drastic than anticipated.

Although the Post-Questionnaire garnered more positive results than the Pre-Questionnaire, some questions gave more insight than others. The two questions that addressed re-occurring pain, tension, and muscle strain both during and after playing showed better results than expected, but were not the most effective measures of success for the study. As with many approaches that aim to aid in fixing ingrained habits, this study was not able to give students the benefit of seeing the long-term effects of its practices and techniques. Therefore, the questions that were better able to measure the success of the study dealt with students having strategies for dealing with pain, tension, and muscle strain during and after playing. These questions showed an overwhelming amount of positive results, given that over half of the students agreed to having strategies to deal with pain, tension, or muscle strain during or after playing when it arises. Furthermore, over one quarter of the students gave the response of “strongly agree” to these
questions and none of the participating students responded with “disagree” or “strongly disagree”.

The follow-up questions in the Post-Questionnaire also garnered positive results. Over half of the participating students agreed that they found the three lessons to be beneficial for the study of their instrument and participation in orchestra, while an additional 23.33% strongly agreed. Once again, there were no students who responded with “disagree” or “strongly disagree”. Although the percentages were not as positive with the question pertaining to the benefit of other students their age learning this information, it was still a better result than expected. Half of the students agreed that the lessons would be beneficial for other orchestra students their age, while 16.67% strongly agreed, 23.33% were neutral, and 10% disagreed. It is possible, however, that the students who responded with “neutral” or “disagree” felt that the lessons would be beneficial for orchestra students in a younger age range, rather than them feeling that it was not beneficial at all.

Overwhelmingly, the students were the most positive about the stretches that were presented in the first lesson and reviewed throughout. Although this result was somewhat expected, it was much more existent than anticipated. Furthermore, there were many more positive comments related to the incorporation of anatomical pictures and models than foreseen. Perhaps this is because it was a way that students connected well to the material presented. Many of the older students are interested and currently taking the high school anatomy course, and therefore were able to connect the content to another facet of their education.

Of the constructive comments from students in the Post-Questionnaire, the majority dealt with tailoring the lessons to be more interactive, in depth, and digestible. Many of the students felt that the power point slides were full of too much information, making it difficult to focus.
This was most definitely an expected response, given that there is a wealth of information that could have been presented and it is a challenge to choose which parts and how much. Some students even felt that it would be beneficial to break the third lesson into two lessons. After feeling rushed in the final lesson to cover all of the material, it would undeniably be a more effective way to present it to the students. Furthermore, it would expand the ability of the lessons to be interactive and engaging. As stated above, there were also students who felt that the content might be more beneficial for younger students. This would possibly garner more positive results, due to the fact that it may give students an earlier intervention to unhealthy body techniques. Ideally, however, this content would be taught at all levels of an orchestra program, rather than with a specific age range.

Unfortunately, the video recording of the lessons did not prove to glean much, if any, results associated with student involvement and response. Although it was able to show some student participation and engagement, it was not logistically possible for all students to be in view of the camera. Therefore, the video recordings were better able to serve a reflective purpose in order to analyze presentational and teaching techniques. These videos provide the ability to improve the lessons for future student research groups.

Conclusions

Overall, this study garnered positive and negative results in relation to the incorporation of the Body Mapping Technique into the everyday orchestra curriculum. On one hand, this study was able to test how students reacted to the material and movement activities that were presented. In general, the students responded positively to the information presented and were
able to connect it to their daily lives. Furthermore, they showed interest in learning more about the content and incorporating some aspects into their own musical education.

On the other hand, however, the specific implementation of the Body Mapping Technique into the orchestra classroom on a daily basis is still a challenge, given that this study did not fully explore all of the strategies in which to do so. Rather than present a small amount of information over time, it was presented in large quantities and did not allow for reinforcement of the content material over time. Therefore, although this study did not fully accomplish the creation of a Body Mapping-based set of lessons that can successfully be incorporated into the orchestra curriculum, it gave insight into the ways in which students may respond to the content and how it can be better molded for future orchestra student populations.

For future research, this content would be best incorporated in smaller, more digestible pieces. Each 30-minute lesson and power point could be broken down into 5 to 10-minute lessons and taught in the beginning of the school year. Within the first few weeks of school, the students would also learn about the various stretches to do before and after playing. For beginning students, the content of this study could be incorporated into the teaching of their instrument technique. For returning students, this content could be covered within the first few weeks of school, and then referenced for the rest of the year and beyond. In this way, the content could be reinforced over a longer period of time and become incorporated into the daily practice of student musicians.
Appendices

Appendix A: HSIRB Approved Consent Form

Appendix B: Pre-Lesson Questionnaire

Appendix C: Post-Lesson Questionnaire

Appendix D: Lesson Plan One – “Body Mapping Basics”

Appendix E: Lesson Plan Two – “Posture Boot Camp”

Appendix F: Lesson Plan Three – “Common Issues (and How to Fix Them)”
Western Michigan University
Department of Music Education

Principal Investigator: Dr. David Smith
Student Investigator: Gretchen Clemans
Title of Study: Teaching Body Mapping in the Orchestra Classroom

You have been invited to participate in a research project titled "Teaching Body Mapping in the Orchestra Classroom." This project will serve as Gretchen Clemans’ thesis for the requirements of the Lee Honors College. This consent document will explain the purpose of this research project and will go over all of the time commitments, the procedures used in the study, and the risks and benefits of participating in this research project. Please read this consent form carefully and completely and please ask any questions if you need more clarification.

What are we trying to find out in this study?
The purpose of the study is to explore ways in which to teach orchestra students how to incorporate safe body techniques into their daily practice and rehearsal. These safe body techniques will help to prevent injury, tension, and pain, which lead to a healthier ensemble as a whole.

Who can participate in this study?
Those who can participate in this study comprise only of the students in the Symphony Strings Orchestra at Wayland Union High School and have signed and returned this document to Ms. Clemans.

Where will this study take place?
This study will take place in the orchestra room at Wayland Union High School, during the first 30 minutes of the regular class time for the Symphony Strings students.

What is the time commitment for participating in this study?
Overall, this study should only take approximately 1.5 hours over the course of three different class periods. There is no time commitment for this study outside of class. There will be three, 30-minute lessons that take place in the beginning of the hour of March 22nd, 26th, and 27th.

What will you be asked to do if you choose to participate in this study?
These lessons will include stretching, instruction in the Body Mapping Technique, and movement activities to facilitate better understanding of the content material.

What information is being measured during the study?
Before teaching any lesson, your student will be administered a pre-lesson questionnaire about pain and tension. Additionally, the participating students will be filmed while playing their instruments in order to have data on their posture before any lesson is taught.
Each of the three 30-minute lessons will be filmed with the students’ back to the camera. The camera will be placed so that those who do not wish to be filmed will not be seen. After completing the lessons, your student will be administered a post-lesson questionnaire. This data will be used to measure the effectiveness of the study and the students’ response to the material.

**What are the risks of participating in this study and how will these risks be minimized?**
Overall, the risks involved in this research are very low for students who wish to participate. Students may also experience physical strain beyond what they might normally experience while playing their instrument, but it is very unlikely. During each lesson, I will tell the students that if any movement or stretch I suggest hurts, then they should stop immediately.

As in all research, there may be unforeseen risks to the participant. If an accidental injury occurs, appropriate emergency measures will be taken; however, no compensation or additional treatment will be made available to you except as otherwise stated in this consent form.

**What are the benefits of participating in this study?**
Although the benefits of participating in this study may not have an immediate effect, your student may be able apply the techniques taught in these lessons to playing his/her instrument, leading to a possible decrease of pain and tension. Additionally, your student’s participation may help to show how other band and orchestra teachers to incorporate lessons like this into their classrooms.

**Are there any costs associated with participating in this study?**
There are no monetary costs associated with participating in this study. Since these lessons will take place in the first half hour of class, however, students will be missing a maximum of 1.5 hours rehearsal time over the course of two weeks.

**Is there any compensation for participating in this study?**
There is no compensation for participating in this study.

**Who will have access to the information collected during this study?**
Those currently with access to the information collected include Dr. David Smith (faculty investigator), Karen Nofsinger, and myself. All data – the questionnaires and film footage - will be kept confidential and on a secure hard drive only I have access to after completion of the lessons. Per instructions from Western Michigan University, the data will be kept in their records for three years before being deleted. No names or film footage will be used if the results are published.
What if you want to stop participating in this study?
At any time during the lessons, your student may refuse to participate, stop participating at any
time, or refuse to answer any question without prejudice or penalty. Furthermore, there will be no
negative effect on your student’s grade in orchestra if he/she decides to not participate in any of
the lessons

Should you have any questions prior to or during the study, you can contact the primary
investigator, Dr. David Smith at (297-387-4723). You may also contact the Chair, Human
Subjects Institutional Review Board at 269-387-8293 or the Vice President for Research at 269-
387-8298 if questions arise during the course of the study.

This consent document has been approved for use for one year by the Human Subjects
Institutional Review Board (HSIRB) as indicated by the stamped date and signature of the board
chair in the upper right corner. Do not participate in this study if the stamped date is older than
one year.

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Student Consent

I have read this informed consent document. The risks and benefits have been explained to me. I
agree to take part in this study.

Please Print Your Name

Participant’s signature Date

Parent Consent

I have read this informed consent document. The risks and benefits have been explained to me. I
agree that my student/child may take part in this study.

Please Print Your Name

Participant’s signature Date
Pre-Lesson Questionnaire

Please answer the questions below before Ms. Clemans teaches her four thesis lessons.

Western Michigan University, Department of Music Education
Principal Investigator: Dr. David S. Smith
Student Investigator: Gretchen L. Clemans

1. Name (First and Last):

2. Grade:
   *Mark only one oval.*
   - Freshman
   - Sophomore
   - Junior
   - Senior

3. Primary Instrument:
   *Mark only one oval.*
   - Violin
   - Viola
   - Cello
   - Bass

4. I have a private teacher for the instrument I play in orchestra.
   *Mark only one oval.*
   - Yes
   - No

5. I have experienced pain while playing my instrument.
   *Mark only one oval.*
   - Yes
   - No
6. I have re-occurring pain, tension, or muscle strain while playing my instrument.
Mark only one oval.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

7. I have re-occurring pain, tension, or muscle strain after playing my instrument.
Mark only one oval.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

8. I have strategies for dealing with pain, tension, or muscle strain if it occurs while I'm playing my instrument.
Mark only one oval.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

9. I have strategies for dealing with pain, tension, or muscle strain if it occurs after I play my instrument.
Mark only one oval.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree
Post-Lesson Questionnaire

Please answer the questions below after Ms. Clemans teaches her four thesis lessons.

Western Michigan University, Department of Music Education
Principal Investigator: Dr. David S. Smith
Student Investigator: Gretchen L. Clemans

1. Name (First and Last):

2. Grade:
   * Mark only one oval.
   - Freshman
   - Sophomore
   - Junior
   - Senior

3. Primary Instrument:
   * Mark only one oval.
   - Violin
   - Viola
   - Cello
   - Bass

4. I continue to have re-occurring pain, tension, or muscle strain while playing my instrument.
   * Mark only one oval.
   - Strongly Disagree
   - Disagree
   - Neutral
   - Agree
   - Strongly Agree
5. I continue to have re-occurring pain, tension, or muscle strain after playing my instrument.  
*Mark only one oval.*
- [ ] Strongly Disagree
- [ ] Disagree
- [ ] Neutral
- [ ] Agree
- [ ] Strongly Agree

6. I have strategies for dealing with pain, tension, or muscle strain if it occurs while I'm playing my instrument.  
*Mark only one oval.*
- [ ] Strongly Disagree
- [ ] Disagree
- [ ] Neutral
- [ ] Agree
- [ ] Strongly Agree

7. I have strategies for dealing with pain, tension, or muscle strain if it occurs after I play my instrument.  
*Mark only one oval.*
- [ ] Strongly Disagree
- [ ] Disagree
- [ ] Neutral
- [ ] Agree
- [ ] Strongly Agree

8. I found the four lessons that Ms. Clemans taught to be beneficial for the study of my instrument and my participation in orchestra.  
*Mark only one oval.*
- [ ] Strongly Disagree
- [ ] Disagree
- [ ] Neutral
- [ ] Agree
- [ ] Strongly Agree
9. I feel that other orchestra students my age would benefit from learning this information.
Mark only one oval.

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

10. One thing I really enjoyed was:

11. One thing I feel that Ms. Clemans taught well was:

12. One thing that I feel Ms. Clemans could improve or change is:

13. Some other constructive comments I have are:
Lesson One: Body Mapping Basics

Teacher: Gretchen Clemans
Class: Symphony Strings - Thesis
Date: March 22, 2018

Objective(s): The students will be introduced to the Body Mapping Technique, learn about stretches to do before playing, and learn about proper breathing.

Opening Set:
1. What is pain? What is tension?
2. Musicians As Athletes

Body of the Lesson:
1. Simple Ways to Deal Pain & Tension
2. The Body Map and the Kinesthetic Sense
3. What is “Mismapping”?
4. The Body Mapping Technique
   a. When We Encounter More Serious Pain...
5. How to Breathe Like We’re Vocalists
6. Pre-Playing Stretches

Evaluation: While teaching the concepts above, I will have the students practice the various motions I am teaching. I will watch them to make sure that they are executing these motions correctly.

Closing Set OR Transition: Putting it All in to Practice
Lesson Two: Posture Boot Camp

Teacher: Gretchen Clemans
Class: Symphony Strings - Thesis
Date: March 26, 2018

Objective(s): The students will learn about good posture in terms of their instruments and everyday life.

Opening Set:
1. Review from Lesson One.
2. Stretch

Body of the Lesson:
1. Teach Proper Sitting Technique
   a. Things to Avoid When Sitting
2. What and Where is our “Power Zone”
3. Posture Review
   a. Violin/Viola
   b. Cello
   c. Bass

Evaluation: While teaching the concepts above, I will have the students practice the various motions I am teaching. I will watch them to make sure that they are executing these motions correctly.

Closing Set: Posture in Everyday Life: Connect what I taught the students above to how it can be applied outside of the orchestra classroom.
Lesson Three: Common Issues (and How to Fix Them)

**Teacher:** Gretchen Clemans  
**Class:** Symphony Strings - Thesis  
**Date:** March 27, 2018

**Objective(s):** The students will learn about common issues that occur while playing our instruments and different strategies for fixing them.

**Opening Set:**
1. Review from Lesson Two  
2. Stretch

**Body of the Lesson:**
1. Common Head and Neck Mismapping  
   a. Strategies to fix it  
2. Common Shoulder Region Mismapping  
   a. Strategies to fix it  
3. Common Forearm, Wrist, and Hand Mismapping  
   a. Strategies to fix it  
4. Common Lower Back Mismapping  
   a. Strategies to fix it  
5. Common Foot and Leg Mismapping  
   a. Strategies to fix it

**Evaluation:** While teaching the concepts above, I will have the students practice the various motions I am teaching. I will watch them to make sure that they are executing these motions correctly.

**Closing Set OR Transition:** Additional Resources to Pursue
References


