The Effects of Background Music in an Educational Setting

Frederick Herrmann
EDU 530
Spring 2008
Outline

• The Mozart Effect
• The Affect Effect
• Time-On-Task
• Special Education
The Mozart Effect

• Because music is a progression over time, researchers have hypothesized that certain background music should enhance students spatiotemporal reasoning.
Evidence?

• Evidence of the Mozart Effect is not conclusive.
• Most Mozart Effect experiments involve paper-folding tasks (PFTs).
• Ivanov and Geake (2003) found “some evidence” of the Mozart Effect with school children in a classroom setting.
The Jury is In

• After a thorough literature review, Črnčec, Wilson, and Prior (2006) reported that “. . . at present there is no strong evidence for the Mozart effect in children” (p. 581).

• They add: “Given the weak empirical support for the Mozart effect generally . . . continuing popular enthusiasm for the Mozart effect is surprising” (ibid.).
The Affect Effect

• Hallam, Price, and Katsarou (2002) found that children who listened to calm background music performed better than those who listened to no music, and children who listened to “aggressive” music performed the worst of all.

• The researchers conclude: “This suggests that the effects of music on task performance are mediated by arousal and mood rather than affecting cognition directly” (p. 111).
Physiological Responses

• Classical music has been found to lower heart stress, reduce cortisol levels, and to positively affect the neural and immune systems in ways which are not wholly understood (Kemper & Danhauer, 2005).

• The medical community is employing the use of music to reduce patient stress and pain.
Time-On-Task

• Davidson and Powell (1986) found that calm background music significantly increased on-task performance.

![Figure 1 - On-Task-Performance for Males](image)
• The effect on females was less pronounced because of the “ceiling effect.”
• The effect on the entire class remained statistically significant.
Teachers using Advanced Brain Technology’s Sound Health® CDs (classical music) reported improvements in students’ time-on-task.

<table>
<thead>
<tr>
<th>Students</th>
<th>More Score</th>
<th>Less Score</th>
<th>No Change</th>
<th>No Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>On Task</td>
<td>70.5%</td>
<td>1.5%</td>
<td>19.5%</td>
<td>8.5%</td>
</tr>
<tr>
<td>Productive</td>
<td>50.5%</td>
<td></td>
<td>41%</td>
<td>8.5%</td>
</tr>
<tr>
<td>Attentive</td>
<td>48.5%</td>
<td>1.5%</td>
<td>41.5%</td>
<td>8.5%</td>
</tr>
<tr>
<td>Quiet</td>
<td>68%</td>
<td>1.5%</td>
<td>22%</td>
<td>8.5%</td>
</tr>
<tr>
<td>Noisy</td>
<td>1.5%</td>
<td>68%</td>
<td>22%</td>
<td>8.5%</td>
</tr>
</tbody>
</table>
Settle Down!

• Hall (1952), Frontzak (n.d.), and Cluphf & MacDonald (2003) found that calm background music helped students to more quickly settle into their class work.

• This phenomenon proved especially true in the early morning, after lunch, or after afternoon “transitional periods.”
Math Anxiety

• Background music has also been shown to reduce Math Anxiety before testing (Haynes, 2003).
Special Education

• Music’s ability to calm and soothe makes it especially useful in Special Education.

• Lang (2001) experimented with Mozart in a classroom of 5 children with various disabilities: autism, ADHD, PDD, and moderate cognitive delay.

• “Significant improvement was found in the on-task persistence behaviors for all the children in the study” (Abstract).
ADHD &/or LD

• Many experts and advocates promote background music for ADHD/LD children.
• Not only is background music helpful in the classroom, it also helps ADHD children to fall asleep.
Autism

• Ablort-Morgan (2003) studied the affect of calm music on a classroom of autistic children.
• She concluded: “The continual use of background music in the classroom of children diagnosed with autism, in order to improve behavior, is recommended” (p. 111).
Emotional/Behavioral Disorder

- Hallam & Price (1998) studied the effects of background music on EBD students.
- Improved behavior and performance was observed.
And that’s not all . . .

- Savan (1999) experimented using Mozart as background music with EBD children.
- These children experienced lower blood pressure, body temperature, and pulse rate.
- Better physical coordination was also observed, though it may be a secondary effect of the other physiological changes.
Conclusion

• Background music probably does not have a direct cognitive effect (the Mozart effect), but instead affects temperament.
• Calming background music helps initiate focus on academic work and increases time-on-task.
• Calming background music is especially beneficial to children with neurological disorders.
Sources (1)


Sources (2)


Sources (3)

