Afterschool Music Education Program Linked to Social-Emotional Advantages for Children Facing Economic Hardship

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Background on music education

• Decreased access
• Disproportionate impact
• Arts equity problems
Potential importance of music education

- Inclusivity
- Success experiences
- Diverse cultural traditions
- Individual expression and associated positive emotions
Music education and social-emotional growth

- Experience of interest, happiness, and pride
- Team building
- Persistence
Study design

- After school music education program
- Persistence and social-emotional functioning
- Children at risk via poverty and racism
- Quasi-experimental
- Hypothesis
Description of MEP

- Music program types
- Frequency and duration
- Comparison group
503 students
- MEP Group ($n = 345$)
- Comparison group ($n = 158$)

Demographics
- 60.8% female
- 70.1% Black/African American, 9.0% Latinx American, 5.2% Asian American, 15.6% White/European American.
- Mean age 9.58 years ($SD = 1.21$ years)
- 97.4% of children fell below the federal threshold for poverty status.
- 1.6% of children fell below the threshold for low-income status.
Method and measures

- Demographic Information
- Musical persistence
  - Rhythm synchronization task
- Social-emotional problems
  - The Brief™ Problem Monitor for students (Achenbach et al., 2011)
### Table 1

*Descriptive Statistics and Comparison of Demographic Characteristics of MEP versus Comparison Students (N = 607)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>MEP (n = 345) Mean (SD)</th>
<th>Comparison (n = 158) Mean (SD)</th>
<th>Mean Difference</th>
<th>SE Difference</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>9.73 (1.26)</td>
<td>9.60 (1.13)</td>
<td>.12</td>
<td>.09</td>
<td>1.38</td>
<td>.169</td>
</tr>
<tr>
<td>Sex</td>
<td>.35 (.48)</td>
<td>.47 (.50)</td>
<td>-.11</td>
<td>.04</td>
<td>-2.94</td>
<td>.003**</td>
</tr>
<tr>
<td>Race/ethnicity</td>
<td>.85 (.36)</td>
<td>.83 (.38)</td>
<td>.02</td>
<td>.04</td>
<td>.61</td>
<td>.551</td>
</tr>
<tr>
<td>Family income</td>
<td>20.79 (16.98)</td>
<td>22.68 (16.87)</td>
<td>-1.88</td>
<td>1.77</td>
<td>-1.07</td>
<td>.288</td>
</tr>
<tr>
<td>Poverty status</td>
<td>.98 (.15)</td>
<td>.97 (.18)</td>
<td>.01</td>
<td>.02</td>
<td>.87</td>
<td>.384</td>
</tr>
</tbody>
</table>

Note: Child age is in years. Child sex and race/ethnicity are scored dichotomously (*male* and *racial/ethnic minority group status* = 1). Caregiver income is in USD. Poverty status is assessed by the school based on ratios of family income to family size, compared with federal poverty thresholds and is coded dichotomously (*impoveryished* = 1).

*p < .05, **p < .01, ***p < .001.*
<table>
<thead>
<tr>
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<th>MEP (n = 345)</th>
<th>Comparison (n = 158)</th>
<th>Mean Difference</th>
<th>SE Difference</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEP for disability</td>
<td>.10 (.32)</td>
<td>.12 (.32)</td>
<td>-.02</td>
<td>.03</td>
<td>-.76</td>
<td>.450</td>
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<tr>
<td>Homeroom grade</td>
<td>1.37 (.65)</td>
<td>1.53 (.81)</td>
<td>-.16</td>
<td>.07</td>
<td>-2.33</td>
<td>.020**</td>
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<tr>
<td>English grade</td>
<td>1.78 (.80)</td>
<td>1.97 (.89)</td>
<td>-.18</td>
<td>.07</td>
<td>-2.55</td>
<td>.011**</td>
</tr>
<tr>
<td>Math grade</td>
<td>1.81 (.86)</td>
<td>1.97 (1.01)</td>
<td>-.16</td>
<td>.08</td>
<td>-2.01</td>
<td>.046*</td>
</tr>
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<td>Music grade</td>
<td>1.34 (.67)</td>
<td>1.31 (.68)</td>
<td>.03</td>
<td>.07</td>
<td>.42</td>
<td>.675</td>
</tr>
<tr>
<td>Years in other music program</td>
<td>1.07 (1.17)</td>
<td>1.03 (1.29)</td>
<td>.04</td>
<td>.12</td>
<td>.34</td>
<td>.733</td>
</tr>
</tbody>
</table>

Note: IEP (Individualized Education Plan) for disability is coded dichotomously (IEP = 1).
*p < .05, **p < .01, ***p < .001.
Figure 1. Change in persistence for MEP (n = 345) versus comparison students (n = 158)
Social-emotional results

- Repeated MANCOVAs
- Internalizing Behavior
- Externalizing Behavior
- Total Problem Score
Social-emotional Results

Figure 2. Change in social-emotional problems for MEP (n = 345) versus comparison students (n = 158)
Discussion of persistence results

- Greater growth across year for MEP students
- MEP participation associated with increased persistence
Discussion of social-emotional results

- Higher levels of social-emotional problems in fall for MEP group
- MEP participation associated with greater improvement in internalizing, externalizing, and overall problem behavior