

**Study Level Documentation of the Project “Musical interventions for the sustainable integration and cultural participation of refugee children and adolescents - Part project Oldenburg: Learning music, cognitive, psychosocial and integrative development of primary school children“ („Musikalische Interventionen für nachhaltige Eingliederung und kulturelle Teilhabe geflüchteter Kinder und Heranwachsender - Teilprojekt Oldenburg: Musiklernen, kognitive, psychosoziale und integrative Entwicklung in der Grundschule; MINUTE“)**

<i>Objectives &amp; Hypotheses</i>	Objective	The main purpose of this study is to assess the specific effects of a school-based musical intervention program on different areas of child development. Near and far transfer effects of musical training on cognitive and psychosocial skills were examined.
	Hypothesis	Participation in the music program was expected to significantly increase the scores of all dependent variables, when compared to a game-based mathematical intervention and a control group without any intervention.
<i>Research Design</i>	Number of measurements	3 measurements
	Methodological approach	Data rely on a longitudinal-experimental study. The study constitutes a quasi-randomized controlled trial.
	Description of the research design on a construct level	<p>Dependent variables such as linguistic and mathematical competence, working and verbal memory, acculturation, emotional, psychosocial, and musical abilities were evaluated three times in all groups. Group and Time represent the independent variables. The participants were assigned to one of three groups: music, math, or control. Data were collected as follows:</p> <ul style="list-style-type: none"> <li>- prior to the intervention (at the beginning of the third school year; baseline/t1);</li> <li>- immediately after the intervention period (at the end of the third school year; post-measurement/t2);</li> <li>- after a retention interval of approximately six months (follow-up/t3).</li> </ul> <p>Experimental design was a 3 x 3 mixed model, with Group as the between-subject factor and Time as the within-subject factor. In this study, it was controlled for following variables: age, gender, intelligence, choir membership, parental educational level and socioeconomic status.</p>
	Measurement instruments	<ul style="list-style-type: none"> <li>• Students Questionnaire (generated ad hoc)</li> <li>• Parents Questionnaire (generated ad hoc)</li> <li>• CFT 20-R - Weiß, R. H. (2006). <i>Grundintelligenztest Skala 2 - Revision (CFT 20-R) mit Wortschatztest und Zahlenfolgertest (WS/ZF - R)</i></li> </ul>

		<p><i>[Culture Fair Intelligence Test - Revision (CFT 20-R) with Vocabulary and Number Sequence Test (WS/ZF-R)]</i>. Göttingen, Germany: Hogrefe.</p> <ul style="list-style-type: none"> <li>• AGTB 5–12 - Hasselhorn, M., Schumann-Hengsteler, R., Gronauer, J., Grube, D., Mähler, C., Schmid, I., Seitz-Stein, K., &amp; Zoelch, C. (2012). <i>Arbeitsgedächtnistestbatterie für Kinder von 5–12 Jahren (AGTB 5–12) [Working Memory Test Battery for Children from 5–12 Years of Age (AGTB 5–12)]</i>. Göttingen, Germany: Hogrefe.</li> <li>• DEMAT 2+ - Krajewski, K., Liehm, S., &amp; Schneider, W. (2004). <i>Deutscher Mathematiktest für zweite Klassen (DEMAT 2+) [German Math Test for the second grade (DEMAT 2+)]</i>. Göttingen: Beltz Test.</li> <li>• DEMAT 3+ - Roick, T., Göllitz, D., &amp; Hasselhorn, M. (2004). <i>Deutscher Mathematiktest für dritte Klassen (DEMAT 3+) [German Math Test for the third grade (DEMAT 3+)]</i>. Göttingen: Beltz Test.</li> <li>• DEMAT 4 - Göllitz, D., Roick, T., &amp; Hasselhorn, M. (2006). <i>Deutscher Mathematiktest für vierte Klassen (DEMAT 4) [German Math Test for the fourth grade (DEMAT 4)]</i>. Göttingen: Hogrefe.</li> <li>• ELFE 1–6 - Lenhard, W. &amp; Schneider, W. (2006). <i>Ein Leseverständnistest für Erst- bis Sechstklässler (ELFE 1–6) [Reading Comprehension Test for Grades 1–6 (ELFE 1–6)]</i>. Göttingen: Hogrefe.</li> <li>• FEES 3–4 - Rauer, W., &amp; Schuck, K. D. (2003). <i>Fragebogen zur Erfassung emotionaler und sozialer Schulerfahrungen von Grundschulkindern dritter und vierter Klassen (FEES 3–4) [Questionnaire on Emotional and Social School Experiences of Primary School Children in the Third and Fourth Grade (FEES 3–4)]</i>. Göttingen, Germany: Hogrefe.</li> <li>• FRACC-C - Frankenberg, E., &amp; Bongard, S. (2013). Development and preliminary validation of the Frankfurt Acculturation Scale for Children (FRACC-C). <i>International Journal of Intercultural Relations</i>, 37(3), 323–334.</li> <li>• FRKJ 8–16 - Lohaus, A. &amp; Nussbeck, F. W. (2016). <i>Fragebogen zu Ressourcen im Kindes- und Jugendalter (FRKJ 8–16) [Questionnaire on Children's and Adolescents' Resources (FRKJ 8–16)]</i>. Göttingen, Germany: Hogrefe.</li> </ul>
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	Paradigm	The interventions consisted of a musical learning paradigm (instrumental – percussion or ukulele – or choir singing lessons) and a game-based mathematical intervention paradigm (board and card games).
	Setting	School setting (measurements and interventions took place inside school)
	Control operations	Measurements and tests were conducted in a similar timeframe and in the same order in all schools.
	Inclusion/Exclusion criteria	Schools from the city of Oldenburg (Germany) with a high number of children having a migration background were

<i>Sample</i>		<p>included. Seven schools met this criterion and participated in this study. A second criterion of inclusion was that children attend third grade at the beginning of the study. Furthermore, children with and without migration background who returned written consent from themselves as well as from their parents to participate in this study were accepted.</p> <p>Considering final analysis, another condition was settled for the children in the intervention groups: only children who attended 70% of the intervention lessons were included.</p>
	Population	Results can be generalized on the population of third graders with and without migration background living in the city of Oldenburg (Germany) and going to school together.
	Sampling method	Non-random sampling
	Assignment	Quasi-randomized assignment to one of three groups
	Sample size	N = 220 ( <i>n</i> = 109 female, <i>n</i> = 111 male; <i>n</i> = 136 German, <i>n</i> = 84 migrant)
	Power	For conducting analyses of variance (ANOVA) with 3 repeated measures and 3 groups, the following power level was targeted in all cases: $\alpha$ -level: 0.05, power ( $1 - \beta$ ): 0.80, correlations among repeated measurements: 0.50, medium effect size $f = 0.25$ .