

ARTS EDUCATION PARTNERSHIP | MARCH 2018

# RESEARCH ON ARTS INTEGRATION— AN ESSA EVIDENCE REVIEW

PRESENTATION TO ARTS EDUCATION PARTNERSHIP  
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Meredith Ludwig, American Institutes for Research  
Rachel Hare Bork, The Wallace Foundation

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MAKING  
RESEARCH  
RELEVANT

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# Presentation Agenda

- Study Background
- Evidence Review Approach
- Findings of the Evidence Review
- Discussion

# Study Background

# Evidence Review Research Questions

- Are there research studies on arts integration that meet the criteria for evidence as specified in ESSA?
- How large are the effects of arts integration interventions on student outcomes, particularly for students who are disadvantaged?

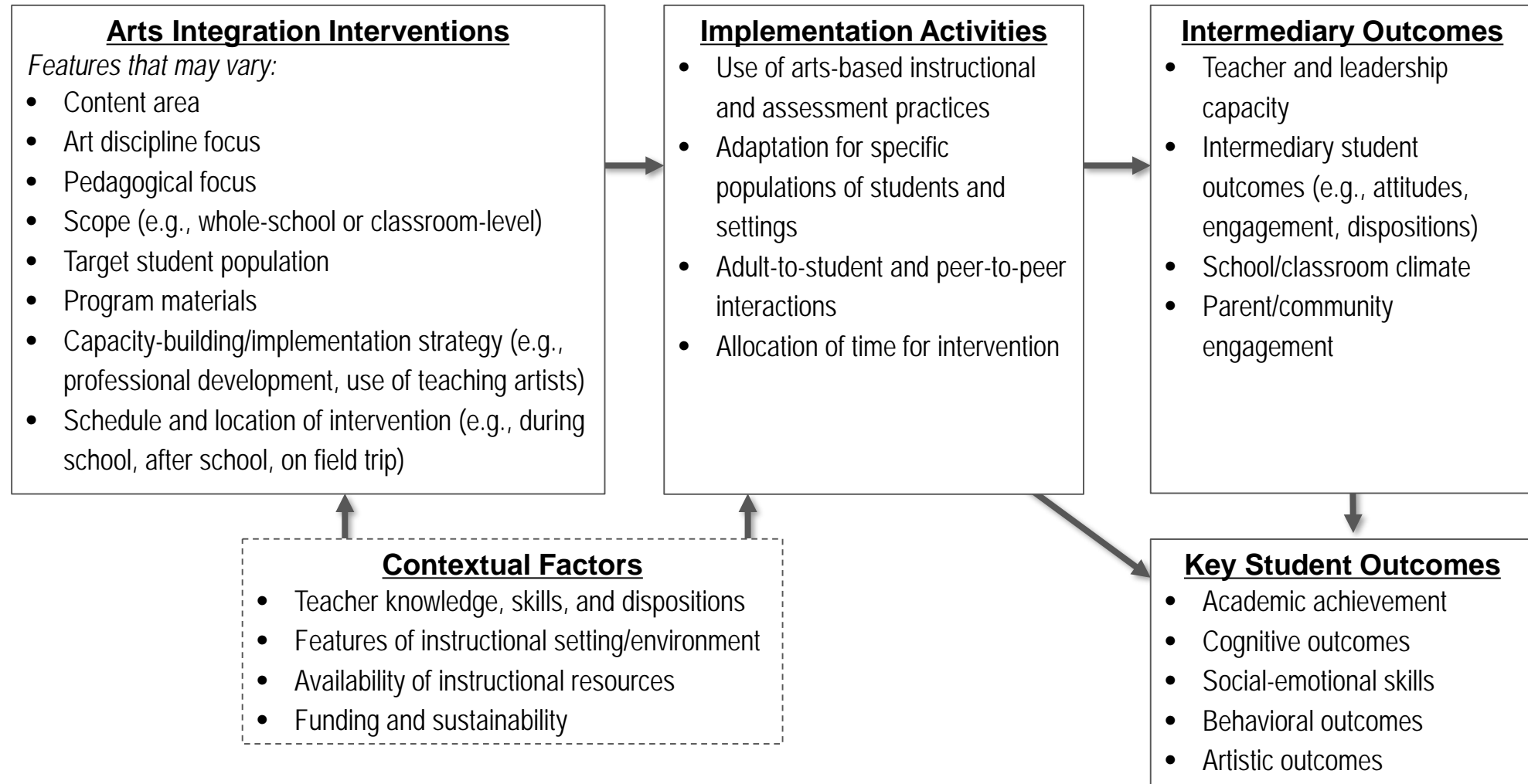
# Definitions of Key Terms Use in the Evidence Review Report

- **Arts integration intervention:** A specific approach, set of activities, strategy, or program linking arts with at least one other subject to improve student and school-related outcomes.
- **Study:** An empirical investigation of the effect of an arts integration intervention on a particular sample and set of outcomes.
- **Report:** A written summary of a study, in the form of a journal article, a book or book chapter, a dissertation, a technical report, or a conference paper.

# Arts Integration: Definition

- Arts integration is the practice of purposefully connecting concepts and skills from the arts and other subjects.
- Components of arts integration include:
  - professional development opportunities,
  - the use of specialized personnel,
  - the use of specialized instructional materials,
  - field trips, and
  - whole-school reform models.

# Descriptive Logic Model: Arts Integration



# ESSA and the Arts

- ESSA includes at least 12 different funding opportunities that can be used to implement arts integration interventions.
- Some examples include the following:
  - Title IV of ESSA explicitly identifies programs in the arts and arts integration as allowable activities, and it provides for dedicated assistance for arts education.
  - ESSA also offers funding for arts integration interventions that address the needs of specific student subgroups, such as economically disadvantaged students and English learners.



# Federal Investment and Arts Activities

Federal Investment in the Arts	Evidence Required for Funding	Eligible Activities (Funded by ESSA and Relevant to the Arts)
Title I	<ul style="list-style-type: none"> <li>• Tiers I, II, or III only for comprehensive and targeted school support (Sec. 1003)</li> <li>• Tier IV allowable for other Title I activities</li> </ul>	<ul style="list-style-type: none"> <li>• Schoolwide and targeted assistance</li> <li>• Comprehensive support and targeted school support</li> <li>• Direct student services (participation in courses not otherwise available)</li> </ul>
Title II	<ul style="list-style-type: none"> <li>• Tiers I, II, III, or IV</li> </ul>	<ul style="list-style-type: none"> <li>• Professional development, including for arts educators</li> <li>• Training for integrating arts into other courses</li> </ul>
Title III	<ul style="list-style-type: none"> <li>• Tiers I, II, III, or IV</li> </ul>	<ul style="list-style-type: none"> <li>• Supporting coursework in the arts</li> <li>• Building educator capacity</li> <li>• Acquiring digital resources (all for ELs)</li> </ul>
Title IV	<ul style="list-style-type: none"> <li>• Tiers I, II, III, or IV</li> </ul>	<ul style="list-style-type: none"> <li>• STEAM</li> <li>• 21st Century Community Learning Centers</li> <li>• Arts in education courses (programs for art educators and art materials and partnering with museums)</li> <li>• Charters, Magnets, Awards for Academic Enrichment, Promise Neighborhoods, and Full-Service Community Schools</li> <li>• Education Innovation and Research</li> </ul>

# Four Tiers of Evidence Defined By ESSA

Activity, strategy, or intervention that—

Demonstrates a statistically significant effect on improving outcomes based on

- (I) strong evidence from at least one well-designed and well-implemented **experimental study**; or
- (II) moderate evidence from at least one well-designed and well-implemented **quasi-experimental study**; or
- (III) promising evidence from at least one well-designed and well-implemented **correlational study with statistical controls for selection bias**;

or

- (IV) (i) demonstrates a **rationale based on high-quality research findings or positive evaluation** that such activity strategy or intervention is **likely to improve** outcomes; and
- (ii) includes **ongoing efforts to examine the effects**

# Tier IV Definition: Breaking Down Terminology

- Studies classified as providing a ***research-based logic model***
  - Present a graphical representation of how the intervention is intended to affect relevant outcomes and
  - At least one of the components included in that logic model is supported by empirical research.
- Studies classified as providing a ***research-based theory of action***
  - Do not include a graphical representation,
  - Do describe how at least one feature of the intervention is theorized to affect relevant outcomes, and
  - At least one of the described features is supported by empirical research.
- Studies classified as providing a ***theory-based rationale***
  - Present an explanation of how at least one of the intervention's features is theorized to affect relevant outcomes and
  - Discuss underlying theories that shaped the intervention's design.



# Applying ESSA Evidence Tiers to Arts Integration Literature

- ESSA
  - Provides an evidence review lens or framework and uses the term “interventions.”
  - Broadens the subject area emphasis to include a well-rounded education.
  - Provides funding opportunities to increase support for particular student subgroups such as students who are economically disadvantaged and English learners.
- Arts integration literature
  - Reports on strategies and interventions.
  - Studies connection of arts with academic subjects and addresses multiple outcomes.
  - Often focuses on similar subgroups of students.

# Evidence Review Approach

# Evidence Review Approach

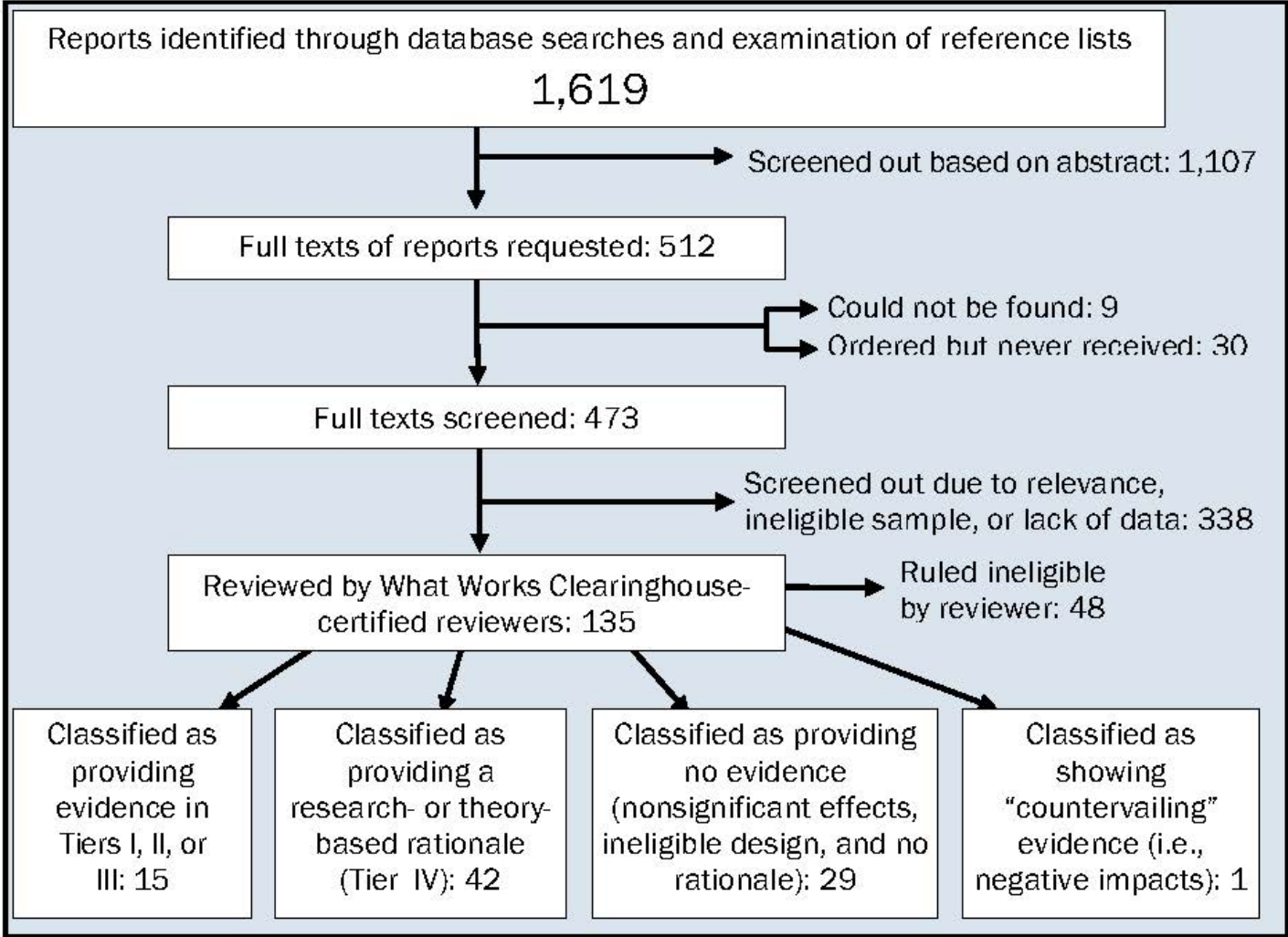
- Conducted a comprehensive search of educational databases and clearinghouses to identify reports.
- Screened abstracts and full-text documents for the following information:
  - Focus on empirical studies
  - Data about student outcomes
  - Articles and dissertations published since 2000
  - U.S. students in prekindergarten through Grade 12 as participants
- Reviewed empirical studies for evidence alignment.
- Synthesized results according to ESSA Tiers of Evidence.

# Types of Study Features Recorded From Each Eligible Study Report

Report	Study	Sample and Setting	Intervention	Effect Size
<ul style="list-style-type: none"> <li>▶ Year of publication</li> <li>▶ Publication vehicle</li> </ul>	<ul style="list-style-type: none"> <li>▶ Whether study meets WWC standards</li> <li>▶ ESSA evidence tier</li> </ul>	<ul style="list-style-type: none"> <li>▶ Sample sizes</li> <li>▶ Grade levels</li> <li>▶ Race/ethnicity characteristics</li> <li>▶ Students' socioeconomic status</li> <li>▶ Setting</li> </ul>	<ul style="list-style-type: none"> <li>▶ Single or multiple components</li> <li>▶ Teacher professional development</li> <li>▶ Involvement of professional artist</li> <li>▶ Types of program materials used</li> <li>▶ Student field trip</li> <li>▶ Schoolwide model</li> </ul>	<ul style="list-style-type: none"> <li>▶ Outcome of interest</li> <li>▶ Effect size (<math>g</math>)</li> </ul>

Source: Authors' review protocol.

# Disposition of Studies Screened and Reviewed





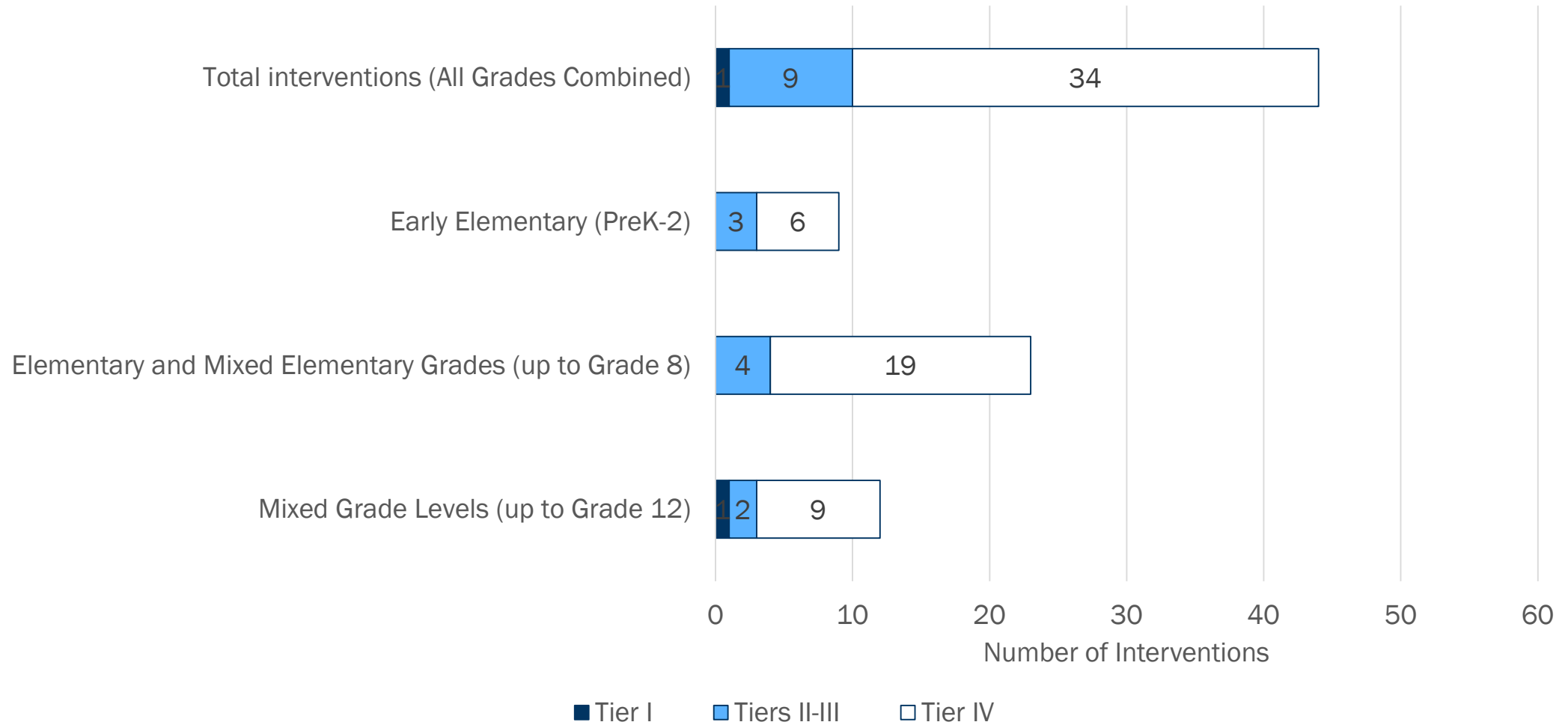


# Challenges Conducting the Evidence Review

- How do we spot an arts integration intervention?
- How do we treat studies reporting on multiple school grades?
- How do we report the results when studies include multiple outcomes?
- How do we treat multiple reports of multiyear interventions?
- How are we certain that we have not missed studies of interventions?

# Findings of the Evidence Review

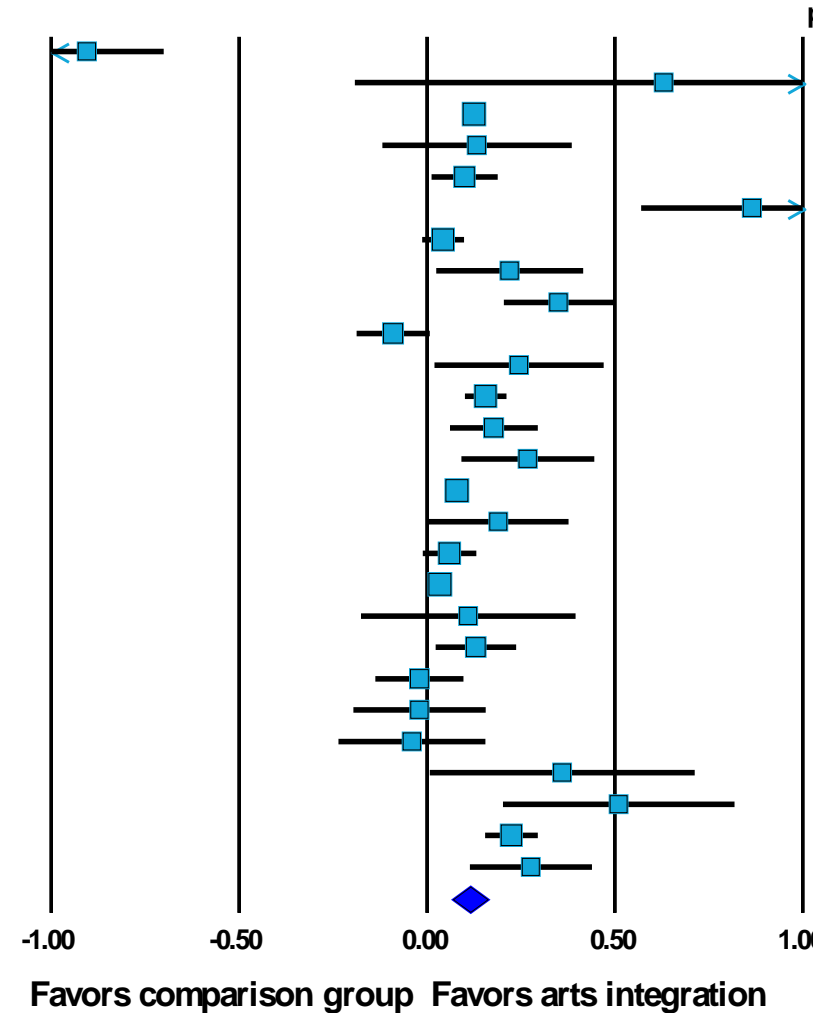
# Interventions With Tier Aligned Evidence: Results of the Review



*Note.* Two interventions that focus on students in early elementary grades and one intervention that focuses on students in mixed elementary grades were supported by evidence at multiple tiers. In the figure, these interventions are counted just once, in the higher-level tier (indicating stronger evidence).

# Average Effects: the Meta-Analysis of 27 Studies

Studyname	Statistics for each study		
	Hedges's g	Lower limit	Upper limit
Albright (2011) Music and Math	-0.90	-1.11	-0.70
Bennett et al (2015) Ringing and Singing Software Program	0.63	-0.19	1.45
Bowen Greene Kisida (2013) Crystal Bridges	0.13	0.10	0.16
Brandon et al (2007) ARTS FIRST Windward	0.13	-0.12	0.39
Brouillette (2014) Teaching Artist Project (TAP)	0.10	0.01	0.19
Brown et al (2010) Kaleidoscope	0.87	0.57	1.16
Doyle et al (2015) Collaborations: Teachers and Artists (CoTA)	0.04	-0.01	0.10
Ellrodt et al (2014) Global Writes' Honoring Student Voices	0.22	0.02	0.42
Ellrodt et al (2014) Global Writes' Poetry Express	0.35	0.20	0.50
Eno & Chojnacki (2013) CREATE	-0.09	-0.19	0.01
Greene et al (2015) Attending live theater	0.25	0.02	0.47
Ingram & Riedel (2003) Arts for Academic Achievement	0.16	0.10	0.21
Inoa, et al (2014) Integrating Theater Arts Project (ITAP)	0.18	0.06	0.29
Kinney & Forsythe (2005) IMPACT	0.27	0.09	0.45
Kisida Greene Bowen (2016) Crystal Bridges	0.08	0.06	0.10
Ludwig & Song (2015) Wolf Trap	0.19	0.00	0.38
Mulker-Greenfader (2014) Teaching Artist Project (TAP)	0.06	-0.01	0.13
Nakamoto et al (2015) Arts for Learning Project (A4L)	0.03	0.01	0.06
Newland (2013) Music and Phonemic Awareness	0.11	-0.18	0.40
Palmer Wolf et al (2014) Nations in Neighborhoods	0.13	0.02	0.24
Piriz & Williams (2015) CREATE	-0.02	-0.14	0.10
Piriz & Williams (2016)b DREAM	-0.02	-0.20	0.16
Piriz & Williams (2016)a CREATE	-0.04	-0.24	0.16
Ramsey et al (2015) Global Writes	0.36	0.01	0.71
Rose, et al (2000) Reading Comprehension through Drama	0.51	0.20	0.82
Walker McFadden et al (2011) Theatre Infusion Project	0.22	0.15	0.30
Walker Tabone et al (2011) Integrating Theater Arts Project	0.28	0.11	0.44
	0.11	0.07	0.16



# Average Effect Sizes for Samples With Different Characteristics

Sample Characteristic	Number of Studies <sup>a</sup>	Average Effect Size	Improvement Index	95% Confidence Interval	Favors Comparison Group			Favors Arts Integration	
					-1.0	-0.50	0	+0.50	+1.0
<b>Percentage of sample made up of racial/ethnic minorities</b>									
25% or less	2	-0.63	-24	-2.01 to 0.75					
26%-74%	6	0.03**	1	0.01 to 0.05					
75% or more	14	0.17***	7	0.07 to 0.27					
<b>Percentage of sample made up of children from low-income families</b>									
25% or less	4	-0.12	-5	-0.86 to 0.64					
26%-74%	8	0.03	1	-0.06 to 0.14					
75% or more	14	0.12***	5	0.08 to 0.15					
<b>Setting of study</b>									
Rural <sup>a</sup>	1	0.11	4	-0.18 to 0.40					
Suburban	2	-0.37***	-14	-0.52 to -0.23					
Urban	19	0.12***	5	0.07 to 0.18					
Mixed	4	0.11***	4	0.06 to 0.15					
<b>Percentage of sample made up of English learner students</b>									
25% or less	10	0.07	3	-0.01 to 0.15					
26%-74%	3	0.18**	7	0.05 to 0.31					
75% or more	2	0.31	12	-0.19 to 0.82					

# Discussion



# Evidence Review Limitations

- Our review may have missed reports on interventions that:
  - Have not been published, or
  - Have not been available at the time of our search.
- Outreach to authors did not always lead to complete information.

# Recommendations for Educators

- Examine the ESSA funding program of interest to your district or school regarding:
  - Required and allowable activities,
  - The amount and duration of funding available, and
  - The level of evidence required.
- Critically assess the theoretical and empirical support behind a proposed intervention.



# Recommendations for Research

- Research that is more rigorous is needed to provide strong evidence for arts integration.
  - To understand the effects of arts integration on specific types of educational outcomes
  - To shed light on the effects of the individual components of arts integration interventions
  - To shed light on the effects of the use of arts integration with particular student populations in particular settings

# Next Activity: Evidence Review of Arts Learning Studies

- Current activity is an evidence review of studies of arts learning.
- For the purposes of developing a logic model, we clarified the definition as follows:
  - *Arts lessons or classes offered in Prek–12 that are (1) standards based and (2) taught by certified arts specialist teachers or teaching artists through (3) an explicit or implied sequential arts curriculum in the (4) subjects of visual arts, media arts, music, dance, and theater.*

# Study Contact Information

- AIR
  - Meredith Ludwig: [mludwig@air.org](mailto:mludwig@air.org)
  - Andrea Boyle: [aboyle@air.org](mailto:aboyle@air.org)
  - James Lindsay: [jlindsay@air.org](mailto:jlindsay@air.org)
- The Wallace Foundation
  - Rachel Hare Bork: [rharebork@wallacefoundation.org](mailto:rharebork@wallacefoundation.org)
  - Evidence Review of Arts Integration may be found at <http://www.wallacefoundation.org/knowledge-center/pages/essa-arts-evidence-review-report.aspx>