Golden OpporTUNEity®:

The Impact of the OpporTUNEity Music Connections ® After School Music Enrichment Program on Student Outcomes

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Dedication

First and foremost, I give all honor and glory to God for without Him I would not have made it to this momentous milestone. I dedicate this to my family for supporting me through many years of study, research, travel, countless papers, and too many all-nighters. I acknowledge my dynamic parents, Sandra and Nathaniel Grant, Sr., who have loved me unconditionally and supported my dreams, no matter how big, while also reminding me to stay grounded and never forget my roots. Thank you to my husband, Byron, for staying beside me through thick and thin and to our four children, Faith, Hope, Charity, and Immanuel for their patience, unconditional love, for being faithful study buddies, and for always cheering me on as mommy worked through many late nights, long weekends, and countless school breaks.

Deepest gratitude to my mentors and champions in education - Mary Driscoll, Christine Landry, Megan Reed, Marcia Riddick, Gerald Yung, Mirko Chardin, Casel Walker, and Darrell Williams, for coaching and encouraging me along my journey into educational leadership. Shout out to my professors and advisors both past and present - Dr. Mary Grassa O'Neill, Dr. Drew Echelson, Dr. Stephen Hoffman, Dr. Joe Murphy, Dr. Mark Smylie, Dr. Catherine Loss, and Dr. Marisa Cannata, for seeing the leader in me when I couldn't see it in myself. Many thanks to my fellow principals, turnaround school leaders, and agents of change - Dr. Peter Cipparone, Dr. Christine Copeland, Edverette Brewster, Katie Grassa, and Robbie Chisolm, for inspiring me to embrace transformational leadership. And finally, special thanks to my colleague and friend, Dr. Jennifer Bradshaw, for her perseverance and collaboration on this project. This has certainly been quite an adventure, and I'm eternally grateful for everyone's support of my educational pursuits.

- *Maisha Rounds, Ed.D. '21*

Dedication

I dedicate this first and foremost to my son, Taylor Bradshaw, my close friend and inspiration, a constant source of love and support, and a truly good human. I've spent my life trying to model for you, and yet I have learned so much from your example. I love you!

Next, I dedicate this to my best friends - the one who took my calls and encouraged me constantly, and who made me laugh and feel loved especially during this year of isolation: Lisa Archibald, Mike Horner, Matt Kirsch, Tara Miller, Jessica Mills, Ricky Price, Xavier Ryan, Mary Simons, and Paul Strader.

To my family, sending you love for grounding me, especially to my sisters Lori, Erin, Kelly and Robin for being dear friends, for making me smile, and for always showing me love. And to my mom, Vicky Clark, you showed me when I was only five that I could help move a boulder, and having the confidence that I can accomplish difficult tasks has shaped my entire life. To my departed father, Rob, you always encouraged and expected us to pursue our education. Thank you for paving the way for me to achieve my educational goals.

Finally, I dedicate this to my Vandy family - to our class cohort who kept it real and supported each other, to Sarah McIlroy and Kelsey Daniels for being my music partners and roommates, to Mike Brown for supporting my uphill equity efforts in New York (moving boulders!), and to the many amazing professors who stretched my thinking and made me a better school leader. And finally to Dr. Maisha Rounds, who was a constant source of encouragement and a true partner in this research work.

So much gratitude!

-   Jennifer Bradshaw, Ed.D. '21

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Executive Summary

Area of Inquiry

"Much more than a simple pastime, music is a learning tool. It teaches self-discipline, self-confidence, and academic skills, just to name a few" (Stabenow, 2002, p. 1). OpporTUNEity® Music Connections is a program that takes aim at disrupting the school-to-prison pipeline by teaching critical self-efficacy and academic performance skills and creating access to musical opportunities for students in grades four to eight, with plans to extend through grade 12. This evaluation of the OpporTUNEity Music Connections program analyzes the impact of weekly after-school music enrichment and tutoring on the short-term success of elementary students (grades 4-6) in a public school system located in the northeastern United States, referred to in this report as WPS. OpporTUNEity serves students attending an urban, public PreK-6 elementary school. Music programming is limited, impacting students' preparation for entrance into music programs at a nearby magnet middle school. OpporTUNEity also serves these same students as they move into the local middle school. After-school programming is also limited in this region. The local community where these students reside is culturally, ethnically, and linguistically diverse, composed of immigrants and minority families with a wide range of familial structures, backgrounds, and citizenship status. Through a partnership between the elementary school, nearby university (AMC), and local correctional facility, OpporTUNEity provides music enrichment after school three days per week as well as tutoring. Students develop music skills and social connections to the broader community.   This study serves as an initial program evaluation at the elementary level to help inform program direction and future analysis as the program serves students throughout their public school education.

Research Questions

The stated K-12 outcomes of OpporTUNEity Music Connections program are to increase academic achievement, improve behavioral outcomes, and provide music performance access and opportunities to elementary and middle school students. And while their long-term goals extend several years into these children's future, including building a pipeline of diverse AMC students and faculty as well as disrupting the school-to-prison pipeline, our research questions are limited to an examination of the early impact of the program. Our study looks at the impact the OpporTUNEity music program has on the social and academic engagement and outcomes of upper elementary students at the local elementary school as reported by students, parents, teachers, and school data by addressing these questions:

1. Does OpporTUNEity influence students' academic motivation? In this context, academic motivation is defined as engagement, self-regulation, self-efficacy, and attendance.

2. Is there a correlation between OpporTUNEity and students' academic achievement? In this context, academic achievement is defined as performance in English Language Arts and Math on standardized tests (MCAS - Massachusetts Comprehensive Assessment System), benchmark assessments (STAR Reading and Math), and report card grades.

3. Is there a correlation between OpporTUNEity and students' sense of belonging? In this context, sense of belonging is defined by perceptions of acceptance and "fitting in," and is measured by social connections and behavior.

Findings

Does OpporTUNEity Influence Students' Academic Motivation?

In this context, academic motivation is defined as attendance, engagement, self-regulation,

and self-efficacy. Data analysis of student attendance during the first two years of the program yielded inconclusive results. However, interviews with key stakeholders provided insight into perceptions of academic motivation. Parents, guardians, and caregivers of program participants stated their children were more motivated to attend school on days when they had OpporTUNEity. They also mentioned their children's willingness to participate in musical activities, preferring OpporTUNEity over other after school programs. Families believe their children also behave better because they want to please their teachers at OpporTUNEity. Teachers at AMC and WPS believe students were motivated by their teachers and peers, noting their students who participate do not want to misbehave, especially on program days, because they do not want to lose the privilege of attending the program. Teachers saw improvements in students' overall engagement both before and during the program. School and program administrators saw improved attendance on days the program was in session as well as at concerts.

Most interesting were the voices of students who participated in OpporTUNEity. They shared a common belief that OpporTUNEity made going to school fun and helped them overcome new challenges. They all enjoyed learning to sing new songs and play instruments. Several students who were interviewed shared short-term goals of improving musically and long-term goals of wanting to pursue a career in music.

Is There a Correlation Between OpporTUNEity and Students' Academic Achievement?

In this context, academic achievement is defined as performance in English Language Arts and Math on standardized tests (MCAS - Massachusetts Comprehensive Assessment System), benchmark assessments (STAR Reading and Math), and report card grades. Data analysis of the program's initial two years included academic performance and yielded inconclusive results.

While on several measures, including attendance and assessments, OpporTUNEity participants performed at higher rates than non-participants, this was not consistent from grade level to grade level, and the differences were not statistically significant. When accounting for pre-program differences, an analysis of variance shows greater growth rates for program participants, but again not at a statistically significant level.

Parents, guardians, and caregivers acknowledged their children performed well academically in school prior to participating in OpporTUNEity because they were good students in general. Families attributed their children's continued academic success to their enrollment and participation in OpporTUNEity. Educators also believed OpporTUNEity may have had some impact on students' academic achievement on standardized tests, particularly MCAS (as reported by WPS staff) and in their overall confidence as learners (as reported by AMC staff). WPS principals past and present partnered with OpporTUNEity to support their school improvement plan's short-term goals of student growth on standardized tests for school turnaround. The AMC program director has a long-term goal of WPS students matriculating into arts programs, college, and a career in music education.

This data analysis is limited by a few factors. One is the lack of consistently available measures from year to year. The STAR assessments were not given during the baseline/pre-program 2017-18 school year, and the MCAS assessments were not given during the second year of the program (2019-20). This is due to a change in leadership in the school as well as the cancellation of the 2019-20 MCAS assessments as a result of the COVID-19 pandemic. The second limiting factor is the impact of COVID-19 on instruction and grading during the 2019-20 school year, which may have impacted the consistency of course grading practices. And the third is the evolution of the program delivery itself, which has not been consistently delivered

in each of the program's years due to the director's willingness to learn and change based on student and teacher feedback. The data's ability to measure student performance moving forward, should this program analysis continue into the future, will be further disrupted by the 2020-21 school year's operation in a fully remote setting, which significantly reduced OpporTUNEity program participation and changed the program delivery model to remote.

Is There a Correlation Between OpporTUNEity and Students' Sense Of Belonging?

In this context, sense of belonging is defined by perceptions of acceptance and "fitting in," and is measured by social connections and behavior. Parents raved about OpporTUNEity staff, seeing them as extended family members. WPS and AMC teachers noted a strong sense of belonging, connection, community, and family between and among participants, both during OpporTUNEity and outside of the program as they engaged with peer participants beyond program hours. Behavior concerns were nearly nonexistent. Administrators reported very few suspensions over three years and noted that OpporTUNEity participants generally were well-behaved. Students reported feeling comfortable and connected to their teachers and friends in the program during and outside of OpporTUNEity.

It is our hope that the program and its analysis will continue for the next several years. Students, parents, and teachers alike sang the praises of OpporTUNEity Music Connections. Though the early academic indicators do not show statistically significant growth, the reported social connections, growth in music skills, and increased motivation and self-efficacy are all evidence of the program's early success.

Recommendations

1. **Create a database** to record student attendance and contact information to facilitate future study of the program's impact. Use consistent metrics from year to year.

2. **Develop a music curriculum framework** for consistency, replication, and expansion (Durlak & Weissberg, 2021; Education Through Music, 2017).

3. **Strategically embed academics into OpporTUNEity enrichment activities** (Augustine, McCombs, Schwartz, & Zakaras, 2013).

4. **Administer pre- and post-surveys** to collect student and parent benchmark data, determine the program's impact over time and lay the foundation for future studies.

5. **Build a [shared](), [distributed](), or [collective leadership]() organizational structure** so the program does not solely rely upon one individual, in this case the program director (Dubb, Tompkin, Pickett, and Smith, 2018; Northhouse, 2007; CQ Net, 2021).

6. **Further diversify the OpporTUNEity teaching team** to deepen students' sense of belonging (Education Alliance, 2021; Ladson-Billings, 1994).

7. **Continue efforts to create neutral spaces within students' local communities** by holding OpporTUNEity classes at the elementary on designated days. Funneling resources back into economically disadvantaged communities bridges opportunity gaps to disrupt the school-to-principal pipeline (Hickey, 2018; Smink, 2021).

8. **Use asset-based language** in all written and spoken communications about the participants in the program to strengthen students' self-efficacy, motivation, and self-determination (Farrington, 2012; Evans, 2015; Christle, 2005; Durlak & Weissberg, 2021).

9. **Dosage** - Encourage families to participate consistently each day the program is offered

because higher dosages can lead to greater impact than lower dosages (Vandell, 2013; Wallace, 2020; Chang & Jordan, n.d.; Chong & Kim, 2010).

10. **Consider strategic planning for program expansion.** If you decide to scale OpporTUNEity in the future, develop a 5-year strategic plan collaboratively with the leadership team or board of directors to scale OpporTUNEity using data from this report (Education Through Music, 2017; Education Through Music, 2018). Consider increasing the number of days per week the program is offered or possibly extending the program to more students in earlier grades. Further discussion of our recommendations are found at the end of this report and in Appendices C-I

.

Introduction

About OpporTUNEity

Currently, students are distributed over five cohorts: 4th, 5th, 6th, 7th, and 8th grade. This program serves majority minority students. The program director of OpporTUNEity also serves as the Dean of Music at the local university. She has a passion for bringing music enrichment to people across the lifespan of development, beginning in elementary school through college students at the local university and adults incarcerated in the local prison. The OpporTUNEity website states, "The mission of OpporTUNEity is to strengthen the ties between post-secondary music programs and their local communities while promoting the use of music as a means to engage undergraduate students in educational programs that emphasize social change." The program director has forged partnerships in service of students enrolled in this program between the local university, referred to in this report as AMC, the local school district (WPS), the local housing authority (WHA), a community organization (BCU), a cooperating music program (JoMP), and the local house of corrections (WHC). Currently, students are distributed over 3 grade levels: fourth through sixth.

Area of Inquiry

Music programming at the feeder middle school is very limited (Martiros, 2020). The local elementary schools was selected to pilot OpporTUNEity because students are more vulnerable due to being socioeconomically disadvantaged with limited afterschool enrichment opportunities. The program director seeks to provide music enrichment for students to address this gap. As the children are immersed in enriching experiences on campus, they also gain exposure to the college campus, build community amongst themselves and the college

undergraduate students. Long-term program goals are for this program to serve as a pipeline increasing students' matriculation into college at AMC, assuming teaching roles at AMC, diversifying the music field, and cultivating music appreciation, in addition to disrupting the school-to-prison pipeline.

Purpose

The purpose of evaluating the OpporTUNEity Music Connections program is so that our findings can inform future programming, possible expansion, and programmatic improvements. The program director has an expansion plan already underway, building access to more students each year, and envisions the program's further expansion beyond the current WPS schools it serves. By evaluating early program effects, this study aims to provide feedback both to the program director and to potential future partners who are interested in early program effects. Additionally, as the program is still growing and evolving, there is an opportunity to inform future program implementation. And finally, this study establishes a starting point for future research of the program's impact, suggesting measurement tools that can be continued as well as new measurement tools that can be implemented to further support future program expansion.

Organizational Context

Mission and Vision

The mission of OpporTUNEity is to strengthen the ties between higher education music programs and the local communities while promoting music as a means of engagement for undergraduates to emphasize social change. By prioritizing neutral spaces and reciprocal learning, this program leverages resources at the post-secondary level to make musical learning opportunities accessible to underserved communities. College students also develop their own inclusive philosophies and practices through hands-on learning. The work of OpporTUNEity program calls on all participants, elementary to higher education, to grapple with challenging concepts (OpporTUNEity, 2020).

Organizational Structure

OpporTUNEity Music Connections is led by the program director who has forged multi-faceted partnerships with several stakeholder groups working in tandem to address opportunity gaps and disrupt the school-to prison pipeline.
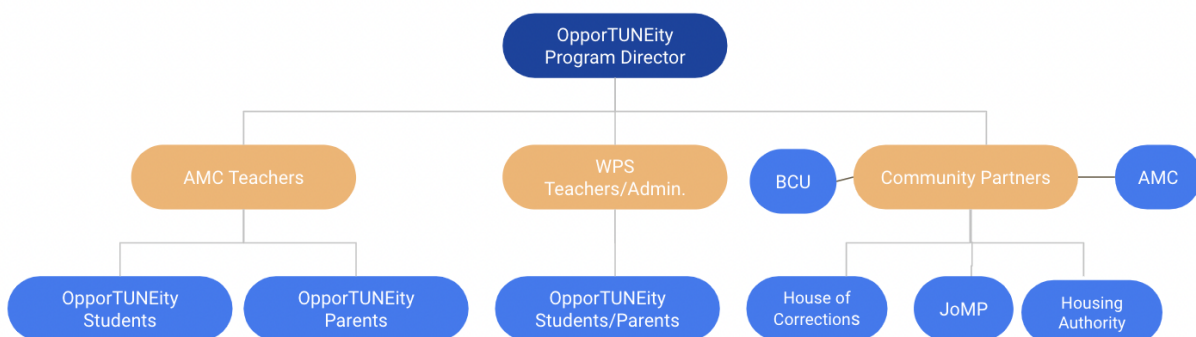
The partnership between OpporTUNEity, AMC, and WPS is supported by AMC's connection with the jail (WHC), where another arm of the program is run at the latter end of the school-to-prison pipeline for prison inmates. Our study focuses on the entry to the school-to-prison pipeline targeted by the partnership between OpporTUNEity, AMC, and WPS.

For the intents and purposes of this study, we narrowed our focus on the initial entryway into the school-to-prison pipeline that OpporTUNEity seeks to disrupt - elementary school. OpporTUNEity partnered with the local elementary and middle school to bring music programming to schools where programs were nonexistent due to district budget cuts. The program is growing each year with the students. Currently, the majority of students enrolled in OpporTUNEity are in grades 4, 5, and 6 at the elementary school, so this is where we initiated our probe.

The selected Title 1 urban public elementary school serves students in preschool through grade 6. Fifty-five percent of students identify as Hispanic/LatinX, 22% African American, 15 % White, 5% Asian, and 3% Multiracial. Ninety-four percent of its total student body population of approximately 249 scholars designated as high needs, 64% of students' first language is not English. Moreover, 43% of students are English learners, 83% are economically disadvantaged, and 22% are students with disabilities. The school's 2020 accountability classification shows substantial progress toward targets. On the most recent standardized assessment, Massachusetts Comprehensive Assessment System (MCAS) in 2019 prior to the pandemic, 20% of students met or exceeded expectations in Math and 25% of students met or exceeded expectations in English Language Arts. The school has not been identified as requiring assistance or intervention (MA DESE, 2021).

OpporTUNEity Music Connections is a microcosm of the elementary school, serving a diverse group of students representing many different language groups, races, ethnicities, and ability levels. The majority of OpporTUNEity participants identify as students of color and are designated as economically disadvantaged, reside in public housing, and receive free or reduced lunch. AMC and WPS teachers identify predominantly as White suburban, middle class from outside of the local community served by OpporTUNEity. Funded by the local house of corrections, this partnership between the local school district and local college enables children in grades 4-6 to connect with college-aged counterparts and engage in mutually beneficial music education classes 2-3 days per week typically on Mondays, Wednesdays, and Fridays. Since the pandemic, class schedules have been more flexible, with classes sometimes occurring Tuesdays, Wednesdays, and Thursdays.

AMC undergraduate students who teach OpporTUNEity classes are music education majors ages 18-21 seeking careers in teaching music, so they welcome the chance to work with students in OpporTUNEity. For context, 65% of AMC college students identify as White, 13% Black/African American, 10% Hispanic/LatinX, 10% ethnicity unknown, 1% Asian, and 1% other. AMC ranked #1,744 in ethnic diversity nationwide with a student body composition that is above the national average (College Factual, 2020). While the student diversity is above the national average, AMC staff diversity is well below the national average with 85% of AMC staff identifying as White, 10% ethnicity unknown, and 1% of each of the following: Asian, Black/African American, and other (College Factual, 2020).

The symbiotic relationship between AMC students working as OpporTUNEity staff and WPS students builds the teaching skills of music education majors at the local college while providing music classes to disadvantaged students in low-performing schools. Students are

selected based on teacher recommendation and student request. The first year the program in 2017 started by targeting 5th and 6th graders. By 2020, twenty 4th graders were enrolled, which was 75-80% of the 4th grade class at the selected elementary school. The program director found 4th grade to be the "sweet spot," with students possessing the skills and motivation to fully engage in the program. Going into year three, she anticipates having a new group of ten 4th graders. "Kids who started with us are continuing into middle school" (Martiros, 2020).

On a typical Wednesday afternoon, participating students are bused from their elementary school to the local college. After this 35-minute trip, students arrive on campus and cycle through four 30-minute music classes: Creative Expressions, Choir, Technology, and private piano lessons. Run by music therapy majors, Creative Expressions gives spaces for kids to bring their own cultures into classrooms through drum circles, creative dance, and coloring. During choir, they receive "ear training" and instructors build students' capacity to hear and sing in a group. In the Technology "tech lab" class, students work on various music composition projects using digital media. Students also receive private piano lessons. The private piano lessons offered were initially intended to "create a bunch of little pianists" (Martiros, 2020), but gradually turned its focus toward providing enrichment for talented students demonstrating promise to give them intensive lessons via a pull-out service delivery model. All classes are designed by the 65-70 college music majors who help teach the classes. Additionally, on Tuesdays and Thursdays, elementary students have the opportunity to stay after school and receive tutoring and music practice lessons with AMC college students.

Key Stakeholders and Decisions

OpporTUNEity is supported by community partnerships with local educational institutions and community agencies. Music majors at AMC as well as WPS teachers and administrators play key roles in program implementation. OpporTUNEity is supported by AMC and its partnership with the WHC correctional facility where OpporTUNEity also provides classes for inmates. The WHC Superintendent, Sheriff, and songwriting students in prison take part in the program as administrators and participants. The local housing authority also provides additional funding and assistance, with many elementary and middle school families residing in affordable housing units under the management of the WHA. Key stakeholders also include elementary school students, referred to in this report as program participants.

Area Of Inquiry

Problem of Practice

Students attending the selected elementary face special challenges both in their community and at school. The problem at hand is that their circumstances put students at greater risk for dropout, incarceration, and poor long-term life outcomes as a result of their opportunity gaps:

- Students are at higher risk for dropout and incarceration, poor long-term life outcomes as result of their current environments and ubiquitous opportunity gaps (Martiros, 2020).

- Students have a higher level of economic challenge (80% economically disadvantaged) than the rest of the district (58.5%) and the state (32%) (MA DESE, 2021).

- 94% percent of these elementary students are considered high needs (MA DESE, 2021).

- Students also have a higher rate of disability classification (22%) and there are more English Learners (43%) than the district and state (MA DESE, 2021).

- Students' access to resources is limited, including district-provided music programming available to other students across the district and state (Martiros, 2020).

Evidence

Student academic performance at this elementary school is below that of the district and state. There is also an absence of after school programs at the elementary level. Access to enrichment activities and music programs is limited at both the elementary and middle school levels. Low student achievement is further evidence of opportunity gaps (MA DESE, 2020) .
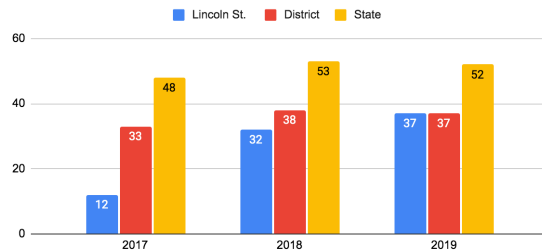
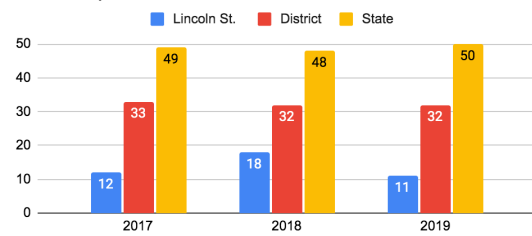**2017 Massachusetts School Report Card Overview**

By high needs population	Our school		Elementary Schools in our district		Elementary Schools in MA	
	#	%	#	%	#	%
Economically disadvantaged students	228	80.0	8,312	58.5	112,788	32.1
Students with disabilities	57	20.0	2,319	16.3	55,388	15.8
English language learners	140	49.1	5,487	38.6	41,478	11.8

Percentage of 4th Graders Meeting/Exceeding Expectations on MCAS ELA 2017-2019

- Lincoln St.   - District   - State

	2017	2018	2019
Lincoln St.	12	32	37
District	33	38	37
State	48	53	52

Percentage of 4th Graders Meeting/Exceeding Expectations on MCAS Math 2017-2019

- Lincoln St.   - District   - State

	2017	2018	2019
Lincoln St.	12	18	11
District	33	32	32
State	49	48	50

OpporTUNEity's program theory posits that if students attend music classes and receive tutoring services at the AMC setting by college students, they will benefit socially, academically, and personally from the support, instruction, and exposure to the college setting. Not only will they benefit in the short-term, but they will want to pursue higher education. The theory proposes that, if offered a scholarship at the college providing the service, then those students will be more likely to enroll not only into college but more specifically at AMC, and in their music program in particular, due to their increased interest in and talent in music. AMC offers all OpporTUNEity participants OpporTUNEity scholarships based on need. The program theory is that some students will therefore apply to AMC, receive scholarships to AMC, and attend AMC for music education. Ultimately, these students will become music teachers at AMC, diversifying the music faculty at AMC and inspiring the next group of students to follow in their footsteps. Further, this process will disrupt the school-to-prison pipeline by funneling students into college.

Causes and Relevance

The root cause of the exigent opportunity and achievement gaps can be traced back to school desegregation and the resulting phenomenon known as "White flight" in this region when there was a mass exodus of White families from the urban areas and public schools for suburban and rural communities. From the days of desegregation to the current pandemic, "White flight" and disinvestment resulted in a loss of economic and educational resources" in this region (Farley, 1980; Wilker, 2020). White families moved to the suburbs seeking better career and educational opportunities, taking their tax dollars with them which had formerly funded public schools. Their departure created a void in which resources were depleted, leaving behind a vacuous gap in educational resources and community services where many black, brown, and immigrant families still actively participated (Ring, 2011; Wilker 2020).

Failure to address these opportunity gaps could result in a widening of achievement gaps and expedite student entry into the school-to-prison pipeline by means of gradual school disengagement. OpporTUNEity is working to address the opportunity gaps at the elementary school by providing music enrichment classes and after-school tutoring to help students with their homework and assist families needing after-school care. The program also creates stronger connections between the school and the community. Parents have the option of attending student musical performances at AMC. The program plans to bring more of its offerings on-site to the housing developments and community complexes where the students live.

OpporTUNEity faced significant challenges during the 2020-2021 school year due to the COVID-19 pandemic. Consequently, participation in the program, which had been strong and growing pre-pandemic, dropped dramatically. As a result, our quantitative data analysis is limited

to pre-pandemic figures. The program has persisted, however, adapting to an online format during

the pandemic.

Literature Review

OpporTUNEity Music Connections takes aim at disrupting the school-to-prison pipeline by providing music enrichment to students in elementary, middle, and ultimately high schools as well as prisoners in the local correctional facility. Our study focuses on the pre-emptive disruption to entry into the pipeline, more specifically, programming targeting elementary school-aged students. Our literature review focuses on three key components of OpporTUNEity as they relate to elementary and middle school students: (1) music enrichment, (2) tutoring, and (3) after-school opportunities. First, we review literature about the school-to-prison pipeline to inform our understanding of OpporTUNEity's mission and vision. From there, we examine literature about after school programs and tutoring to provide more clarity on the value of these components of OpporTUNEity. Finally, we delve into research about music enrichment to isolate its impact on students and better understand the potential interplay of all three elements on the outcomes of students enrolled in OpporTUNEity.

Disrupting the School-to-Prison Pipeline

Academic failure, exclusionary discipline, and poor or absent relationships between students and teachers lead to student disengagement and dropping out, all factors which play prominent roles fueling the school-to-prison pipeline (Christle, Jolivette, & Nelson, 2005; Lento, 2020; Berlowitz, Frye & Jette, 2017; Kim, Losen & Hewitt, 2012; Mittleman, 2018; Skiba, Arredondo & Williams, 2014). Christle's 2005 study finds that "the majority of court-involved adolescents have experienced school exclusion, academic failure, and dropout" (Christle et al., 2005, p. 69). But school-level characteristics can help minimize the risks for youth delinquency, and there are several research-based alternatives to catch students before they fall between the

cracks of the educational and criminal justice systems. Key components include after school and out of school time programs, tutoring, and enrichment through arts.

"Ending the School to Prison Pipeline… With a Trumpet!" (Hickey, 2018)

A 1998 study conducted of nearly 200 students in a school district in New York found that of the two student groups studied, the group that had a minimum of two years of learning in an instrumental music program scored between fifteen to nineteen points higher in all subjects than did those students who were not in the program. The comparative overall grade averages between the two groups was 87.1% to 69.4% (Lento, 2020). A qualitative analysis of a 5-year music program in a juvenile detention facility uncovered evidence potentially supporting components of positive youth development in a music composition program at an urban detention center for minors. Over 5 years, more than 700 youth participated in the program and created primarily rap music compositions. Two main categories emerged as reasons for enjoying this program: competence and positive feelings. Linked to competence was creativity, autonomy, and a desire for a better life. Further research also indicated culturally relevant and creative music programming as a tool in positive youth development (Hickey, 2018).

Impact of After School, Out-of-School Time (OST), and Tutoring Programs

After school, OST, and tutoring programs offer structured learning environments outside the traditional school day, providing childcare and activities for children with working parents or single parents (National Conference of State Legislatures, 2011; McCombs, Whitaker & Yoo, 2020). Students participate in learner-centered programs beyond the traditional curriculum. Programs fall into three categories: 1) specialty programs aiming to help children develop specific skills like soccer or coding; 2) multipurpose programs including a mixture of homework help,

games, and enrichment; and 3) academic-based programs such as tutoring and academic enrichment (McCombs et al., 2020). Participation in after-school programs leads to a reduction in negative behaviors such as juvenile delinquency (Gottfredson, Gerstenblith, Soule, Womer, & Lu, 2004; Mahoney, 2000), substance abuse (Carlini-Cotrim & de Carvalho, 1993), school dropout (Nazfiger *et al.,* 2012), and other counterproductive outcomes related to a lack of parental supervision (Chong & Kim, 2010). Moreover, nearly 70 studies by researchers and commentaries by educators, policymakers, and community leaders acknowledge the power of OST programs to: 1) promote student success in the short term as well as college and career readiness long-term; 2) build character, resilience, and wellness; 3) foster community partnerships maximizing resources; and 4) engage families meaningfully in their children's learning (Wallace, 2020; Nazfiger & Ferguson, 2020).

Improved achievement, attendance, and social emotional skills are a byproduct of high quality afterschool programs, preparing students for success both in the present and later in life (McCombs et al.*,* 2020; Chang & Jordan; Durlak & Weissberg, 2021). A 2009 study of seventh and eighth graders at ten Boys & Girls Clubs across the U.S. found that those attending after school programs missed school fewer days, increased school effort, and gained academic confidence; moreover, school attendance and effort increased as the number of days attending after school programs increased (Chang & Jordan; Durlak & Weissberg, 2021). Consistent participation in afterschool programs leads to lower dropout rates and bridges achievement gaps for low-income students (Smink, 2021; Vandell, 2014). For older students, regular participation in an afterschool program may also reduce risky behaviors and increase the development of college and career skills, as evidenced by studies of after school programs in Texas and Wisconsin (National Conference of State Legislatures, 2011; Council for a Strong America, 2019; Nazfiger

& Ferguson, 2020; Nazfiger et al, 2012). OST programs can provide measurable benefits to youth as well as families in outcomes directly related to program content (Wallace, 2020). Academic OST programs, such as tutoring, can significantly improve academic outcomes. Student outcomes are influenced by the quality, consistency, and intentionality of the program. Children need to attend OST and after school programs regularly to measurably benefit from programming (Wallace, 2020).

Arts-based after school activities programming effectively increase self-esteem, social skills, and leadership skills among at-risk students. Music particularly is a "powerful therapeutic medium because of its viability, familiarity, and ability to induce intrinsic motivation" (Chong & Kim, 2010, p. 190). Short-term exposure to music has been shown to create social cohesion in experimental studies (Eerola & Eerola, 2013).

In order to fully realize the benefits of afterschool programming, adequately trained staff, regular dosage, and high-quality programming are essential (Vandell, 2013; Wallace, 2020). When a student misses 10% percent of school days for any reason (about 18 days), negative effects appear in academic performance (Chang & Romero, 2008). Chronic absenteeism can also impact a full class when a teacher needs to repeat material before moving forward with instruction (Chang & Jordan, 2021; Smink, 2021). The research indicates that expanded learning programs, including experiential programs and community learning centers, can be implemented purposefully in order to prevent dropout and increase student engagement (Vandell, 2013).

Music Enrichment

There is a body of literature exploring the relationship between music education and students in the PreK-12 sector. Research reveals that music creates community, stimulates brain development, impacts student behavior and emotions, and enhances the quality of life (Burger, 2016; Chong & Kim, 2010; Hodges & Wilkins, 2015; Tierney, Krizman & Kraus, 2015). Evidence shows that when students listen to preferred music, there is "dynamic interconnectivity in the Default Mode Network, linking music to self-awareness, along with associated personal histories, core emotional memories, and empathy" (Hodges & Wilkins, 2015, p. 46). The Default Mode Network is a set of networks in the brain that are interconnected and involved in conscious awareness, self-reflection, autobiographical memories, and emotions. Making music causes the firing of synapses in both parts of the brain, and musical training leads to numerous changes in the brain that have implications for learning (Hodges & Wilkins, 2015).   Hodges & Wilkins' (2015) research into the available body of literature finds scientific evidence supporting the powerful role of music in enhancing quality of life.

The brain reaches 90% of its adult size by age six (Tierney et al., 2015). Brain research reveals that music training initiated as late as adolescence can enhance neural processing of sound, language skills, and may impact language-based activities such as reading (Tierney & Kraus, 2014; Tierney et al., 2015). In a 2014 study, 40 adolescents rising freshmen from 3 Chicago area public middle and high schools were tested on their neural responses to sound and language skills before entering high school (pretraining) and again 3 years later after participating in band and music enrichment activities. Results showed that in-school music training that begins as late as high school "prolongs the stability of subcortical sound processing and accelerates

maturation of cortical auditory responses" (Tierney et al., 2015, p. 1). While both groups showed improvement, phonological processing was much greater in adolescents who underwent music training. These results reveal that music training starting as late as adolescence can enhance neural processing of sound and confer benefits for language skills (Tierney et al., 2015).

In a 2013 study in an impoverished area of São Paulo, Brazil, over 200 elementary students with reading difficulties in 10 schools participated in a five-month, randomized clinical trial to test the effects of music education intervention while assessing reading skills and academic achievement. Five schools were chosen randomly to incorporate music classes and five served as controls . Improvements were observed in the rate of correct real words read per minute and phonological awareness. Secondary outcomes of academic achievement in Portugese and Math were also noted (Cogo-Moreira, 2013).

An American study provided evidence that music education causes short-term increases in IQ testing obtained from 6-year-olds (Schellenberg, 2006). The effect seems to last for 11-year-olds and even for adolescents and young adults ages 16 to 25 years old (Schellenberg, 2006). Music and language were also investigated for areas of transfer, and a longitudinal study of 32 "nonmusician" children over 9 months found music to be a catalyst for the acquisition of literacy skills (Moreno et al., 2008) and world languages (Slevc & Miyake, 2006; Milovanov e& Tervaniemi, 2011). Music education has also been found to enhance inhibition, the ability to pay attention referred to as "selective attention" (Degé, Kubicek & Schwarzer, 2011), and sensitivity to emotions in spoken language (Schellenberg, 2006; Eerola & Eerola, 2013). These results demonstrate that music programs occurring in school can bring about neurological changes and establish the potential for brain plasticity driven by experience. (Tierney et al., 2015).

K-12 music training enrichment programs and their neurobehavioral consequences are well-researched and widely understood (Strait & Kraus, 2014). Correlational studies have reported musical enhancements in many different populations over their lifespan. Music training in a longstanding community program that provided free music instruction to at-risk children from underserved backgrounds was found to be quite successful. While one year of training was insufficient to elicit changes in the function of the nervous system function, "greater amounts of instrumental music training were associated with larger gains in neural processing" (Strait & Kraus, 2014, p. 34).   In fact, students who completed two years of music training had "a stronger neurophysiological distinction of stop consonants, a neural mechanism linked to reading and language skills" (Strait & Kraus, 2014, p. 34). Relative to peers who did not engage in musical programs, participants receiving music enrichment showed enhanced speech-in-noise perception (pp. 29–34), verbal memory (pp. 30–33, 35–38), phonological skills (pp. 39–45), and reading (pp. 46–50). In adolescence, music training also leads to faster responses to speech-in-noise (pp. 71), but the extent to which adolescent music education can confer other musical benefits remains unknown (Tierney et al., 2015).

Secondary effects that are non-academic in nature have been noted as well from music enrichment programs. Structured music activities have been shown to enhance self-confidence, self-worth, and socialization skills in children (Sausser & Waller, 2006; Chong & Kim, 2010). An after-school education-oriented music therapy program impacted students' emotional and behavioral problems as well as their academic competency. The study implemented a music therapy program over the span of 16 weeks using music activities and interventions to promote academic, social, and emotional skills. Results showed improvement in social skills and problem behaviors but no improvements in academic competency. This suggests that students with

behavioral issues can benefit from structured music therapy programs, though the positive changes in their emotional and behavioral problems may not necessarily influence academic competency (Chong & Kim, 2010).

Eerola & Eerola (2013) theorizes that music education could create social benefits in the school environment. This theory was tested in 10 Finnish schools with an extended music curricular class and control classes. The quality of school life was assessed by a representative sample of 735 students ages 9-12 in Finland's equivalent of grades 3-5. The results revealed that extended music education enhances the quality of school life, "particularly in areas related to general satisfaction about the school and a sense of achievement and opportunity for students" (Eerola & Eerola, 2013, p. 88). Further analysis showed more impact from music education than other after school programs, particularly visual arts and sports. These results imply that "extended music education has a positive effect on the social aspects of schooling" (Eerola & Eerola, 2013, p. 89), although potential academic benefits seem less clear.

Lower-income children are less likely to engage in beneficial enrichment activities, including art and music lessons, vacations, or visits to educational sites such as museums, zoos, and libraries (Augustine et al., 2013; Alexander, Entwisle, and Olson, 2007; Chin and Phillips, 2004; Wimer et al., 2006). The best examples of the integration of academic content with enrichment opportunities occurred when such content was embedded authentically in the activity, such as in dramatic reading and writing, music study of fractions in rhythms, and application of science concepts in nature explorations (Augustine et al., 2013).

Although the literature is somewhat mixed about the academic benefits conferred upon students participating in music enrichment programs, one consensus is clear: music education and afterschool programs benefit children in a variety of ways that extend beyond academics.

Conceptual Framework

Theory of Change

| If ties between post-secondary music programs and public schools are strengthened... | → | By promoting music as a means of engagement in educational programs, | → | Then the school-to-prison pipeline can be disrupted leading to increased graduation rates, matriculation into college, and entry into the music profession. |
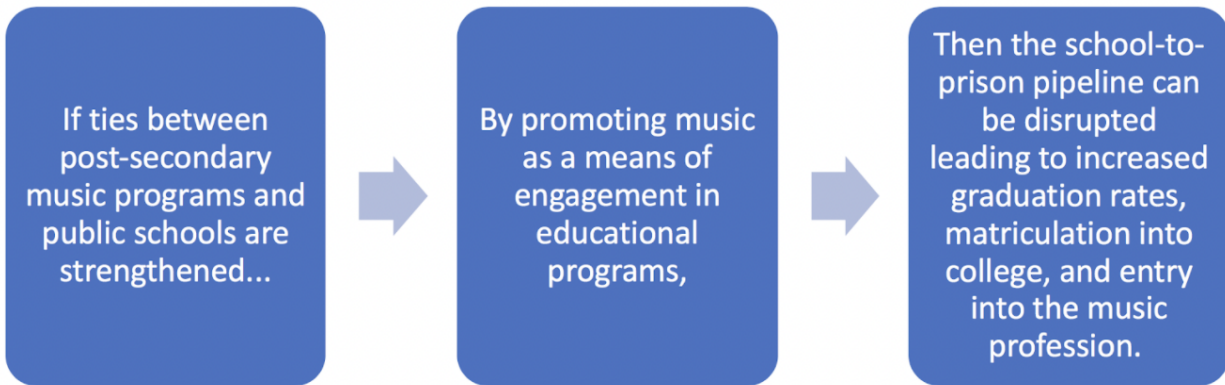
OpporTUNEity theorizes that the school-to-prison pipeline can be disrupted by strengthening the ties between post-secondary music programs and public schools to promote music as a means of engagement in education. The expected outcomes are increased graduation rates, matriculation into college, and a career in the music profession with an added goal to diversify the field of music. This study examines elementary student grades, assessment scores, attendance, motivation, and sense of belonging to determine whether OpporTUNEity music program participation has a positive impact on or correlation with these factors. Based on the research about after school programs and music enrichment opportunities, consistent access to a program like OpporTUNEity would be expected to increase students' sense of belonging, motivation, and sense of self-efficacy. The literature also suggests that access to after-school programming and high quality tutoring will impact achievement factors, so we studied those factors as well. Our goal in studying each of these areas is a) to see if there is an observable or measurable impact in the early years of program implementation and b) to provide a baseline from which to measure these factors in the future.

Conceptual Framework
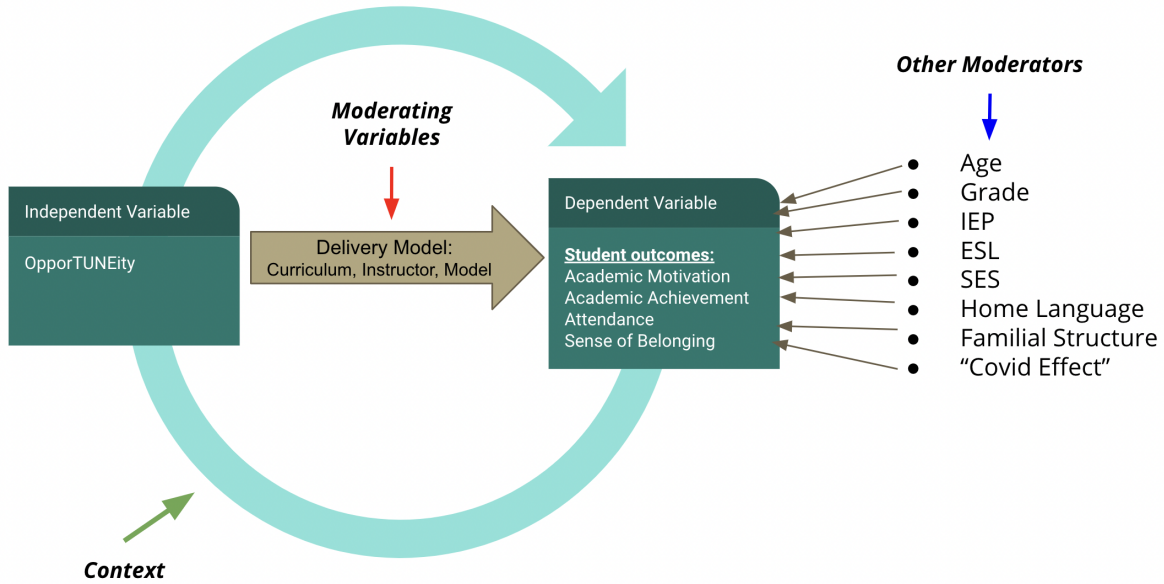
In this conceptual framework, OpporTUNEity is the independent variable and intervention. Student outcomes are the dependent variable, more specifically, academic motivation, achievement, and sense of belonging. It should be noted that there are also moderating variables influencing student outcomes. The moderators in this study are the curriculum, instructor, and learning model. Since there is no consistent curriculum being used, lesson design and content varies by student, instructor, and the time of year, with some thematic units being introduced around certain seasons in certain classes with select students, such as during the holidays. In terms of instructor quality, there was no clear measure within this program at the time of this study. The learning model varies by design, shifting from in-person March 2020 to fully remote during the time this study was conducted during the 2020-2021 school year. This shift to remote learning impacted all students enrolled in OpporTUNEity during the 2020-2021 school year. Past enrollees in 2017, 2018, and 2019 participated in person and reported very

different experiences in lesson delivery and student engagement. One AMC teacher working with the 2020-2021 cohort shared, "This year, it hasn't been the same... It almost seemed, like, a little more difficult to get them [students] to focus on the music aspect because this was not like being in person."

Other moderating variables to consider include students' age, grade level, and special education status, specifically whether or not they have an Individualized Education Plan and receive services. Additionally, students who are English learners and those whose home language is not English may have different experiences accessing the program potentially influencing outcomes. Non-traditional familial structures including students experiencing homelessness, living in foster care, and those being raised by relatives instead of a custodial parent may influence students' outcomes. Since lower-income children are less likely than their higher income peers to participate consistently in enrichment activities (Augustine et al., 2013; Alexander, Entwisle, and Olson, 2007; Chin and Phillips, 2004; Wimer et al., 2006), socioeconomic status has also been noted in our study as a potential influential factor. Finally, the "Covid effect" must be taken into consideration. Some OpporTUNEity participants, teachers, and administrators experienced challenges related to the pandemic, including personal illness, illness of a family member, job loss, and death of a loved one. We performed regressions to account for the relative strength of correlation between outcomes and variables including students' grade level, disability status, status as an English Language Learner, socioeconomic status, gender, and race or ethnicity. We also performed analyses of variation that took into consideration pretreatment differences that could account for differences in achievement outcomes.

The primary stakeholders of this project are the school-aged students enrolled in the program and the AMC teachers and faculty delivering the program. But the stakeholders extend

to the students' broader school and community, as well as to the correctional facility that provides funding for OpporTUNEity and the local housing authority that hosts additional services for students. If the program successfully encourages college attendance, it has the potential to disrupt the school-to-prison pipeline, to diversity the student body and faculty of AMC, and to increase students' graduation and college attendance rates, not to mention increased skills in and appreciation of the fine arts. All of the following stakeholders stand to benefit from their investment in this program:

Definitions

For the intents and purposes of this study, key terms were based on preexisting definitions outlined in the Davis School District Student Perception Survey (Hanover Research, 2013), Tripod Educational Partners Survey - Upper Elementary Items (2014), NCSU Reaching for Rigor Student Survey (Cannata, Haynes, and Smith, 2013), Panorama Student Survey (2020). Academic motivation is defined as self-regulation, engagement, attendance, & self-efficacy. Academic achievement is defined as performance in English Language Arts and Math on standardized tests and benchmark assessments. Sense of belonging is defined by perceptions of acceptance and "fitting in," and is measured by social connections and behavior (Hanover Research, 2013; Tripod, 2014; Panorama, 2020).

Logic Model

The resources and activities in place in the OpporTUNEity Music Connections program are designed to impact student learning on a social, behavioral, motivational and academic performance level, leading to better outcomes for students and society.

Resources	Activities	Outputs	Outcomes	Impact
-Buses/drivers -Teacher liaisons -Music teachers -Academic tutors -Instruments -Funding -AMC College space -Program director -School principals	-Travel to AMC -Music classes -Academic tutoring	-Music learning -Musical performance -Homework completion -Socialization with peers and college students	-Music appreciation -Music skills -Academic understanding -Better grades -Higher attendance rates -Increased social and emotional competencies -Increased social ties at school	-Inspire college attendance -Increase college attendance -Increase music degree students -Diversify the pipeline of music instructors -Diversify the AMC music faculty -Disrupt the school-to-prison pipeline -Inspire future OpporTUNEity participation

Research Questions

Our study asks which of the following impacts the OpporTUNEity music program has on the social and academic engagement and outcomes of upper elementary students:

a) Does OpporTUNEity influence students' academic motivation? In this context, academic motivation is defined as self-regulation, engagement, & self-efficacy.

b) Is there a correlation between OpporTUNEity and students' academic achievement? In this context, academic achievement is defined as performance in English Language Arts and Math on standardized tests and benchmark assessments.

c) Is there a correlation between OpporTUNEity and students' sense of belonging? In this context, sense of belonging is defined by perceptions of acceptance and "fitting in," and is measured by social connections, attendance, and behavior.

We hypothesized that OpporTUNEity has a positive impact on students' academic motivation, achievement and sense of belonging. Our research was designed to address these questions using a combination of qualitative and quantitative data.

Project Design And Data

Our project is a program evaluation aimed at measuring the impact of the OpporTUNEity music program offered through a partnership between a local university and public elementary school in the northeastern United States. The intervention studied is student participation in the OpporTUNEity music education program. Our study examines behavioral and achievement changes associated with participation in the program from its first year (2018-19 school year) to the present (2020-21 school year). Where available, pre-program (2017-18) data is used to serve as a baseline and to measure pretreatment differences between program participants and nonparticipants.

This is a mixed methods study of the program's impact on the elementary students (grades 4-6) who have participated in the program. Quantitative attendance and achievement data measure student engagement and performance over time from 2017-18 through 2019-20. Qualitative data in the form of interviews and focus groups provides program impact data on student attitudes, motivation and behaviors for the 2020-21 school year. This study has a quasi-experimental design lacking random assignment. Participants in the program self-selected into the program with parental permission. While the participants and nonparticipants come from the same pool of students at the same school, some minor pre-treatment differences in academic performance were identified, and the treatment group had slightly higher performance in some areas than the control group prior to participation in the program. These differences were not found to be statistically significant and are detailed in the Findings section.

Research Design - Achievement & Attendance

Pre-intervention	Post-intervention	Setting the stage for future data comparison:

2017-18 Baseline Academic Data

WPS Elementary Students

2018-19 Comparative Academic Data

WPS Elementary Students (n=63)

Participants (25) vs. Nonparticipants (32)

Pre- and post-participation data

2019-20 Comparative Academic Data

WPS Elementary Students (n=32)

Participants (14) vs. Nonparticipants (18)

Pre- and post-participation data

2020-21 Comparative Academic Data

WPS Elementary Students

WPS Middle School Students

Participants (n=6) vs. Nonparticipants

Research Design - Attitudes and Belonging

2020-21 Motivation, Attitudes, & Belonging Data

Lincoln Street Elementary Students

- Student Surveys

- Program Observations
- Interviews & Focus Groups

Student survey based on Davis School District Student Perception Survey (Hanover Research, 2013), Tripod Educational Partners Survey - Upper Elementary Items (2014), NCSU Researching for Rigor Student Survey (2013), Panorama Student Survey (2020).

Designed to more deeply interrogate students' academic motivation, achievement, and sense of belonging in connection with their participation in the OpporTUNEity music program.

Data Collection

We collected data consisting of pre-intervention and post-intervention attendance and achievement as well as interview and focus group accounts of key stakeholders, program

observations, and a review of artifacts from the program.

Qualitative Data

In order to more fully understand the program's goals, current implementation, and impact, we conducted interviews and held focus groups with OpporTUNEity students, parents, and caregivers as well as AMC and WPS teachers and administrators affiliated with the OpporTUNEity program. These stakeholder groups were selected because they were best situated to describe and discuss their personal experiences with the program's impact on motivation, academic achievement, and participants' sense of belonging. We initially planned to only interview OpporTUNEity program participants from the current 2020-2021 school year (*n=6*) but realized with such a small sample size, more substantial data could be gathered from speaking with all 38 current and past participants spanning 2017-2020 who could speak to their experiences in the program pre-Covid. However, due to many pandemic-related difficulties which will be discussed momentarily, only a small portion of current and former participants and families were able to participate. We conducted interviews and focus groups with 3 WPS students, 4 WPS parents and caregivers, 2 WPS teachers, and 3 WPS administrators. Additionally, 8 AMC teachers, and 1 AMC administrator. Two virtual observations of the program provided researchers a clearer lens into the inner workings program. In addition, artifacts were reviewed, including the website, social media, newspaper articles, and press releases featuring the program.

There were numerous challenges collecting data due to the extremely reduced nature of the program during the novel Coronavirus pandemic. First, schools in the study had shifted suddenly to fully remote status the previous spring due to state public health and safety guidelines. The remote learning model continued into the 2020-2021 school year. As a result, fewer students participated in after school programs, including OpporTUNEity, due to limited

access to technology and screen fatigue after attending school remotely for 6 hours during the day. OpporTUNEity's design was adapted to fit virtual parameters outlined by the district, and program dates were also reduced, with a longer than usual winter break from November 2020 through February 2021, further limiting researchers' access to program participants and staff. Families and program staff who were willing to participate in this study did so during their school breaks, weekends, and over the holidays to accommodate scheduling restrictions. Due to social distancing guidelines, all interviews, focus groups, and observations were held virtually via videoconferencing platforms and phone calls instead of in person. With limited access to technology and inconsistent wifi connectivity, some interviews with participants and their families took place over the phone, so body language and visual cues could not be noted during live interviews.

Gathering student and parent consents also posed unique challenges. Language barriers limited researchers' ability to secure student and family consents, resulting in fewer families opting in to the study. Consent forms were only translated into Spanish. As a linguistically diverse community, OpporTUNEity participants and their families represented many more language groups. Moreover, the wording in the consent forms was very complex and had to be simplified to be more easily understood in translations of the consent form. Limited English proficiency also hindered some families' understanding of the interview questions. None of the interview questions had been translated into any languages besides English beforehand. Consequently in some cases, questions and information had to be translated in real time during interviews. Despite these challenges, we successfully completed 8 interviews with program participants and their families as well as 14 staff members and administrators.

From these interviews, we collected and analyzed both qualitative and quantitative data

from key stakeholders, noting trends. Interviewees consisted of four students in the fourth, fifth, and sixth grades who participated in OpporTUNEity, 3 of their parents and caregivers, 8 AMC teachers, 2 WPS teachers, 1 AMC administrator, and 3 WPS administrators. Two formal observations of the program were conducted via live synchronous Zoom sessions during the pandemic. Anecdotal evidence was collected on the program's impact on student motivation, sense of belonging, and attitudes, as well as to identify other impacts not already being measured as follows:

- *Focus groups* with program participants, parents, and WPS teachers and administrators
- *Interviews* with the current and former principals of the elementary school, central office administrator, and AMC program director.
- *Observations* of OpporTUNEity music classes. We attended two after-school program sessions remotely due to Covid-19 guidelines restricting in-person sessions to see how the program is implemented. We were not active participants in the program.

Each student met with researchers virtually via Zoom and by phone at scheduled times with a parent or caregiver present. Program staff and parents/caregivers were interviewed individually and in focus groups.

Quantitative Data

We analyzed quantitative data made available through a data-sharing agreement between OpporTUNEity and the district. Challenges were encountered with quantitative data collection as well. For example, there were gaps in standardized test data with no MCAS data available for 2020 due to the state's cancellation of the test during the pandemic. Additionally, the only standardized benchmark assessment (STAR) delivered to program participants and

non-participants was not given in 2018, the pre-treatment year. We did not analyze the current year's data, which is not yet available, but because this year's online format yielded much lower program participation, future quantitative analysis will be hampered by this year's lack of a significant treatment population.

Quantitative data included performance and attendance measures for both program participants and nonparticipants in the following areas:

- Attendance - annual rates

- Academic achievement - annual outcomes

    - MCAS - ELA and Math (Massachusetts Comprehensive Assessment System)

    - STAR Benchmark Assessments - Reading and Math

    - Report Card Grades - ELA and mathematics

Pre-intervention (2017-18 school year) data was included in the analysis as available in the areas of attendance, grades, MCAS, and grades.

This quantitative study looks at the performance of 63 WPS students (25 participants and 38 nonparticipants in grades 4-6) in the first year of the program (2018-2019) and 32 WPS students (14 participants and 18 nonparticipants) in the program's second year (2019-2020.) All OpporTUNEity participants were selected as participants based on their affiliation with the program and matched with all students who did not participate in OpporTUNEity, referred to in this report as non-participants. No statistically significant differences were found between the two groups pre-treatment. Additionally, the 2018/19 school year analysis only includes students for whom data is available both in 2017/18 and 2018/19 in order to compare pretreatment differences and measure differences in change in performance. Similarly, the 2019/20 school year analysis

only includes students for whom data is available both in 2018/19 and 2019/20.

Table 1
Sample Sizes for Analysis

	Attendance	MCAS ELA	MCAS Math	STAR Reading	STAR Math	Grades
2018-19						
Pretreatment (2017-18)	63	63	62	N/A	N/A	46
Participant	25	25	24	-	-	15
Nonparticipant	38	38	38	-	-	31
2019-20						
Pretreatment (2018-19)	32	N/A	N/A	30	32	32
Participant	14	-	-	13	14	14
Nonparticipant	18	-	-	17	18	18

Summary statistics, including the breakdown and the *n* size for student demographics, including race/ethnicity, gender, disability status, economic status, and English Language Learner status can be found in Appendix A.

Student suspensions and student survey

We collected student survey data; however, the sample size was too small to be included in our statistical analysis (*n=3*). This was due to this year's greatly reduced participation rate and the added challenges of accessing students and families during a pandemic. Student annual suspension rates were also collected, but the total number of students suspended each year was too low to include in our analysis (0-3 students per grade level per year).

Instrumentation

Interview questions were designed to collect data on students' sense of belonging, self-regulation, engagement and self-efficacy, as reported by students, parents, program instructors, and classroom teachers.   These questions were based on the Survey for Self-regulation, Engagement, and Self-efficacy Survey and Teacher-Student Relationships Subscale of the Student Engagement Instrument (Appleton, Christenson, Kim & Reschly, 2006; Betts, Appleton, Reschly, Christenson, & Huebner, 2010; Lovelace, Reschly, Appleton, & Lutz, 2014; Martin, 2007). A copy of our interview protocols and questions for each interview group can be found in Appendix B.

Additionally, all student participants were asked to complete a survey derived from the following researched-based instruments:

(1) Teacher-Student Relationships Subscale of the Student Engagement Instrument (Appleton et al., 2006; Betts et al., 2010; Lovelace et al., 2014; Martin, 2007). Students rate their level of agreement with 9 statements about their school on 4-point scale (*strongly disagree to strongly agree*);

(2) Survey for Self-regulation, Engagement, and Self-efficacy Survey Items (Hanover, 2013). This survey also included an academic questionnaire to better understand their perceptions of academic achievement and motivation.

Data Analysis

Interview data was analyzed to identify and interpret patterns and themes addressing the research questions. Using the matrix below, we noted emerging themes around students' joy and

excitement about attending the program, students' increased connection to peers and their teachers, and improved performance in music and academics:

Emerging Themes

	WPS Teachers	WPS Administrators	AMC Teachers	AMC Administrator	OpporTUNEity Parents	OpporTUNEity Students
Academic Motivation	Excitement	Attendance, Enrollment. Matriculation into arts progs., Student voice	Consistency, Excitement, Fun	Psychological Perspective; Matriculation in arts & AMC; Enrollment	Excitement	Excitement, Fun, Piano, Singing
Academic Achievement	Improved test scores	Increases in ELA scores	Improvement in musical confidence	"We're building the voice program"	Improved English skills	Songwriting, Playing piano
Sense of Belonging	Peer Motivation, Socialization	Peer Connections, Family Relationships, Trust	Community, Family, Friends, Teachers Camaraderie, Socialization	Sociological Perspective, Team Approach	Friendships, Teachers	Friends, Teachers

Quantitative data was analyzed as follows:

- T-tests to compare the difference in means between program participants and non-participants on attendance and achievement measures and to determine pretreatment differences in the groups where that data was available (attendance, MCAS, and grades, but not on STAR).

- T-tests to measure changes in MCAS performance from pretreatment to post-treatment (2018 to 2019 performance) for participants and nonparticipants, and to measure changes in ELA and mathematics grades during the first two years of the program (2018 and 2019).

- Multiple regressions to measure the statistical significance of any correlations between program participation and outcomes related to attendance and

achievement (MCAS, STAR, and grades) as well as to account for possible moderating variables, including gender, race/ethnicity, English Language Learner status, disability status, economic status, and attendance (when not measuring attendance as the outcome variable).

Findings

It was evident during our observations that OpporTUNEity is very dependent upon the program director to run smoothly. Without an elected governing body, advisory board, or leadership team, OpporTUNEity operates under the direct supervision of the program director who spearheads community partnerships, recruits volunteers, leads family outreach efforts, and maintains the program's online presence including the website, social media sites, press releases, and news appearances. The program director also personally texts families to get students logged in when they don't show up for classes. When we asked to observe on a day when the program director could not be present, she admitted that the program does not run well in her absence and she recommended against our observation on that day. While there are many stakeholders working together to fund and implement the program, it is singularly led by the program director.

There were 3 other key findings: (1) OpporTUNEity does influence certain aspects of students' motivation; (2) there may be some practical significance of academic benefits conferred from program participation, though not statistically significant; (3) there are nonacademic benefits conferred upon participants' sense of belonging as a result of participating.

Qualitative findings were consistent with the literature suggesting there is some academic benefit to tutoring and after-school programming (Eerola & Eerola, 2013; Nazfiger & Ferguson, 2020; Smink, 2021; Vandell, 2013), though the quantitative findings were limited by participation numbers and consistency of available achievement measures, and overall they lacked statistical significance. Our qualitative findings were very consistent with the literature regarding the impact that music enrichment has on students' belonging and sense of self-efficacy (Hickey, 2018; Lento, 2020; Nazfiger & Ferguson, 2020).

As a music-based after school program, OpporTUNEity increases participants' self-esteem, social skills, and leadership skills and creates social cohesion (Eerola & Eerola, 2013). Similar to the results in the Brazilian study, our results may be seen as promising in some ways, but they are not, in themselves, enough to make music lessons as public policy (Cogo-Moreira, 2013). In this section, we probe deeper into our findings around academic motivation, academic achievement, and sense of belonging.

Does OpporTUNEity Influence Students' Academic Motivation?

Our first research question inquires about OpporTUNEity's possible influence on students' academic motivation. In this context, academic motivation is defined as attendance, engagement, self-regulation, and self-efficacy. The literature has been quite mixed on the potential academic benefits of afterschool and music enrichment programs. The data converged around key findings that academic benefits are conferred upon students' motivation, more specifically aimed at preventing school disengagement and dropout (Gottfredson, Gerstenblith, Soule, Womer, & Lu, 2004; Mahoney, 2000) as well as college and career readiness long-term (Wallace, 2020; Nazfiger & Ferguson, 2020). Short-term academic benefits seemed less clear, but there were some benefits identified in the literature and noted in our study practically though not statistically significant, such as improved achievement and attendance (McCombs et al., 2020; Chang & Jordan; Durlak & Weissberg, 2021). There were also reported increases in student and family engagement in OpporTUNEity as well as at the identified elementary school. Students also exhibited increased self-regulation and self-efficacy. Teachers and administrators also noted improved attendance.

Attendance

Overall attendance rates at the elementary school served by OpporTUNEity average between 96% and 97% each year for all students in our study (grades 4-6 during school years 2017-2018 through 2019-2020). A comparison of program participants and nonparticipants prior to the program's start (2017-18 school year) shows a slightly higher rate of attendance (0.8% higher) in the treatment group prior to the treatment, but not a statistically significant one:

Table 2
Pretreatment Attendance Rates for NonParticipants and Participants (2017-18)

Two-sample t test with equal variances

	obs1	obs2	Mean1 NonPart	Mean2 Part	dif	St Err	t value	p value
AttendanceRate1718~1	38	25	.96	.968	-.008	.007	-1.05	.291

The current principal at the elementary school acknowledged the school had past attendance problems, but she has noticed significant improvements schoolwide since 2017 after forging the partnership with OpporTUNEity. The principal stated, "Attendance was a big problem at our school and it's drastically improved." Administrators at AMC and WPS saw improved school attendance on days the program was in session on Mondays, Wednesdays, and Fridays as well as on concert days noting, "There was a definite impact on [student] attendance, especially on days when they had OpporTUNEity."

When comparing student attendance data between participants and nonparticipants during program implementation years, attendance rates fluctuate slightly, rising 0.2% more for nonparticipants in 18-19 and 0.5% more for participants in 19-20, but in no case is the difference in mean attendance rates or the change in means statistically significant..

Table 3
Attendance Comparison in Program Year 1 (2018-19)

Two-sample t test with equal variances

	obs1	obs2	Mean1 NonPart	Mean2 Part	dif	St Err	t value	p value
DiffAttRate by Par~1	38	25	.004	.002	.002	.006	.3	.749

In the second year of the program, the treatment group's attendance rebounds and is slightly higher than during their pretreatment year (0.3% higher), and their attendance rate is 0.5% higher than the nontreatment group.

Table 4
Attendance Comparison in Program Year 2 (2019-20)

Two-sample t test with equal variances

	obs1	obs2	Mean1 NonPart	Mean2 Part	dif	St Err	t value	p value
DiffAttRate by Par~1	18	14	.011	.017	-.005	.009	-.6	.563

Noteworthy are the overall high attendance rates. While this annual attendance data does not demonstrate statistically significant differences in the two groups' attendance, students and families self-reported an increased desire to attend school on days when the program was offered. Parents and caregivers noticed their children were more motivated to attend school and participate in musical activities. One mother shared, "We actually tried not to make appointments on Wednesdays when she had OpporTUNEity. It was definitely a motivator."

We should also note more specifically the attendance of participants in the OpporTUNEity program itself, referred to in our report as the dosage. During Year 1, the program dosage was

1x120 minutes per week, meaning that participants attended OpporTUNEity one day a week for 2 hours. That first spring, 12 students had perfect attendance, 8 had only one absence, and six had 2-4 absences. During Year 2 (2020), the dosage increased to 3x120 min./week. However, different students attended OpporTUNEity for differing numbers of days per week. Specifically, 10 students attended OpporTUNEity three days per week (Tuesday-Thursday), 3 attended twice per week, and 24 attended the program on Wednesdays only. Fifteen participants had perfect attendance at OpporTUNEity, 13 had one absence, and the remaining nine had absences ranging from 2-4 days. During the 2020-2021 school year (Year 3), students received an average dosage of 3x120 minutes per week. However, only ten students enrolled in the program, and during our observations, while some students participated enthusiastically, there were absent students and students with their video off, not participating fully or in some cases at all. An example of the program not being fully utilized this year was noted by AMC staff: "During homework help this year, he doesn't have any homework but wants to show this toy that he's programmed." By spring of 2020, dosage was as high as 4x120 min./week for some students, but not all.

It should be noted that attendance records are incomplete, as attendance was not consistently taken in the first semester of the program. AMC staff expressed being pleased with student attendance, reporting, "My kids are very consistent. I have some kids who come every week." Another AMC teacher reported that even after the enrollment decline due to the pandemic, "Those six-seven students were very consistent and showed up every single day. They would go on the computer and participate in OpporTUNEity classes." A third teacher echoed perceptions of students consistently attending, "They showed up at 3 p.m. every day."

A limitation of this analysis is that it does not differentiate student school attendance on program days versus nonprogram days. Collecting and analyzing that data by program date to see

whether there is an increase in school day attendance on program days is a consideration for future study.

Engagement

Participants initially engaged with the program through three main points of entry: 1) teacher recommendation, 2) peer recruitment, and 3) school-based advertisement. Two WPS teachers serving as liaisons between WPS and AMC took a proactive role in identifying, recruiting, and selecting students to participate. "We recruited our students by word of mouth. We sent a registration form home and had it filled out by a parent and returned to school" (OpporTUNEity, 2020). The program director acknowledged these liaisons were instrumental in making the program run, from recruitment, to retention, and everything in between. They rode buses with students during the afterschool program, provided tutoring and homework help, and waited with students when parents were late picking up.

While some students were selected by teacher nomination, others were recruited by peers via word of mouth to participate in OpporTUNEity. One participant shared that she knocked on the doors of her friends in her apartment complex to invite them to join along with her. Another participant reported, *"My friend told me it would be fun, so I joined and she was right. It was fun!"* (OpporTUNEity, 2020).

Still others connected with the program through school-based advertising and outreach. Two students interviewed said they brought home flyers. A parent recounted how her daughter connected with OpporTUNEity:

She started with another program. OpporTUNEity caught her eye. She brought home a

flyer and she said, 'I want to sign up for this.' I remember being confused. I thought they were the same program. But she was the one who knew all about it. She brought it to me and asked me to sign up. I signed off. The bus brought her home as well. I don't have a license or a car, so if they didn't have a bus to get her there. Otherwise I wouldn't be able to get her there. Luckily, they really put that together. (Parent of 5th grade participant)

Wraparound support provided by OpporTUNEity made the program accessible for many economically disadvantaged families who otherwise might not have participated. Providing transportation to and from the program for students weekly and for families during performances effectively sustained engagement in the program:

Last year at their Christmas program, we were able to have the peace of mind. They [OpporTUNEity] had a school bus come here for the students and kids. It was on a Saturday. I was kinda concerned about how she was going to get there. But they had a bus for all the students and their parents. (OpporTUNEity parent of 5th grader)

Another theme emerged that teachers were key drivers of student motivation in the program. Parents, teachers, administrators, and students all agreed that participants were motivated by their teachers. When asked what her son likes most about the program, one mother replied without hesitation, "He loves his teachers! I never saw him like the teachers in our home country like he likes his teachers here." Another parent noted about the college students who teach OpporTUNEity classes, "They get on her [my daughter's] level and what 10 year olds are into, they're more aware." During virtual visits of the program, OpporTUNEity teachers were observed in action doing just that. They solicited students' ideas to collaboratively write a song line by line incorporating students' favorite food, songs, video games, and pastimes:

AMC Teacher 1: What are we gonna do during our break?

Students brainstorm a list while the AMC Teacher 2 shares her screen and types each idea on screen so students can see:

Student 1: Helping cook.

Student 2: Watching 'Supernatural!'

Student 3: Watching the Flash.

Student 2: My Hero Academia!

Student 1: Arts and crafts.

Student 4: Shopping.

AMC Teacher 1: Online or in-person?

Student 3: Both!

AMC Teacher 2: OK, we'll put both online and in person.

Student 2: Playing video games.

Student 1: Catching up on sleep.

Student 4: Seeing our loved ones... safely.

AMC Teacher: Yes, we have to be safe with the Coronavirus still around.

Student 3: Getting a Nintendo switch.

Every student was heard at least once, and in most cases 2-3 times during this 5 minute segment of the songwriting activity. The lesson continued with the teacher adding these lyrics to the new song the class was creating together.

AMC Teacher plays chord progression and sings: I'm gonna binge watch some of my favorite shows. Hmmm… what do we think of that line?

One student responds by giving a thumbs up.

AMC Teacher 1: Supernatural, Academia. (Turns to AMC Teacher 2) Are there any shows that you're going to binge watch?

AMC Teacher 2: I might start watching 'Grey's Anatomy' again. What about you? (turns to Student 2)

Student 2: Playing legos… and like… video games.

AMC Teacher 1: OK, so I'm going to play the song again, and we're going to add in the 4 shows that we talked about.

This technique apparently kept students engaged and motivated them to try something new they had never done before - compose a song. Parents attested to their children's engagement in the program. One mother mentioned that her daughter preferred OpporTUNEity over a strings program she initially attended after school. When her daughter found out about OpporTUNEity, "she signed up immediately. She plans on staying in OpporTUNEity and cutting the ties with the other program." The student went on to explain why she made the switch: "I like music a lot, and I want to play the piano." Since OpporTUNEity taught piano, she preferred it over the strings program. Her love of music and desire to learn to play the piano motivated her to leave the other program to join OpporTUNEity.

While student engagement in OpporTUNEity after school dipped when the pandemic hit due to the sudden shift to remote learning and resulting redesign of program implementation, school engagement did not. The principal at the elementary school noted, "After shutdown, they continued reaching out during the pandemic and wanted to be a part of learning." WPS teachers

were surprised by how OpporTUNEity students remained engaged during the pandemic, wanting to help with the transition to online learning. One teacher reported, "They wanted to set up Google classrooms and they switched over to Class Tag" to keep everyone in their class connected.

Disengagement was mitigated by OpporTUNEity's proactive all-hands-on-deck approach in partnering with the local elementary school. A parent shared about her son's engagement online with virtual OpporTUNEity classes, "We would hear him laughing and singing. We could hear him being loud. It helped him with staying active throughout this pandemic. It gave him something to do every day." Administrators and teachers noted school disengagement was not an issue, with only one suspension over 3 years and very few office referrals in grades 4-6. Another positive unintended consequence was increased family engagement at OpporTUNEity's after-school events. One WPS administrator noted, "Parent participation and attendance is pretty near 100% at the concerts."

OpporTUNEity stands apart from other programs in its affordability. The program is completely free of charge to participants for all services - transportation, piano lessons, tutoring, snacks, and more. Parents and teachers attested to the program's intentional removal of financial barriers to increase accessibility. The mother of one participant shared, "What the OpporTUNEity provides for these children is way more than what any other school would provide. It's free. We were paying monthly for violin. A lot of parents can't pay for much." Another parent added:

Last year at their Christmas program, we were able to have the peace of mind about transportation. They [OpporTUNEity] had a school bus come here for the students and parents. I was kinda concerned about how she was going to get there to the concert

because I don't have a car. When they sent the bus, I didn't have to worry.

An AMC teacher echoed these sentiments:

> I think it's really notable the program is free and the busing has always been provided. It also gives students the ability to express themselves and take free piano lessons which is kind of expensive. Usually, you pay decent money for piano lessons.

> Interviews also revealed that families have musical talents they would like to share. A mother remarked, "I like everything because I am a music lover. Singing, dancing, whatever it may be." Another parent commented, "He understands piano chords because I teach him at home." The caregiver of another participant shared:

> Last time, we went to school and talked about our culture and talked about Diwali. This year, we will go to school to celebrate Diwali. Our niece and her cousin, my son will play violins, dad will dance and play the mandolin, and I can sing and it will be a good festival.

> Parents and caregivers are interested in becoming more involved with OpporTUNEity to ensure its success, return to in-person learning, and possible future expansion. A parent stated, "I just wish they could get back into the classroom. Maybe if more people knew about OpporTUNEity or if there were more programs like this." Families discussed their commitment to supporting their child, sharing their culture, and they want to see OpporTUNEity grow and expand to serve more students.

Self-Regulation

OpporTUNEity provided many opportunities for students to learn how to manage their personal dispositions through Warm Demander pedagogy (Ware, 2006), in other words, expecting

a lot from their students and convincing them of their own brilliance and creativity without doing the work for them. Students demonstrated self-discipline learning the piano and writing songs. During observations, AMC teachers smiled and laughed frequently with students, modeled the desired activity, and then turned the tasks over to students with limited verbal guidance, allowing students to take the lead. Teachers were facilitators and guides rather than leading instruction. Student voice and choice were prominent in every lesson observation, from song selections to the activities chosen. Students were frequently encouraged to engage in cognitively demanding tasks during piano lessons and songwriting. In one case when a 4th grader struggled to learn to play a new song, the teacher zoomed her camera in to focus on the note A flat in the grand staff on her screen. Rather than telling the student the name of the note with which she struggled, the teacher scaffolded by starting with A flat:

> AMC Teacher: You see that? It's called A flat. A line that would be below here, that would be middle C. A note right above that would be what?
>
> Student hesitates: B?... D!

Without prompting from the teacher, the student self-corrected the note from B to D. The lesson continued.

> AMC Teacher: Yes. Now we're looking at the line that would be right after where D is. What would make this line right up from D be?
>
> Student hesitates then responds correctly: E!

The teacher continued asking questions about the notes in the sheet music, urging the student to figure out each note correctly by herself using the strategy they had just tried together. Without prompting, the student then repositioned the camera so the teacher could see her fingers positioned properly on the keyboard. She began playing each note as written on the grand staff

correctly. In this example, the teacher created space for a productive struggle and facilitated this struggle as a guide without intervening or interrupting the process. The student did all of the heavy lifting, from determining each note note and self-correcting her mistakes to deciding when it was time to move from theory to practice and play it on the piano.

To manage student behavior during sessions, teachers used planned ignoring, wait time, and choices to allow students the time and space to make decisions about their own behavior in real time with little to no adult intervention. For example, later during this same lesson when the fourth grader caught her attention wandering, she began singing the lyrics of the song she was learning to play, then said aloud to herself, "Back to piano." Without redirection from the teacher, she returned to the task at hand, learning to play "Halloween" on the piano.

In another instance during a Zoom observation, an AMC teacher prepared to teach a new song in songwriting class and began strumming a progression of chords on her guitar. A 5th grader suddenly announced, "I'm going to take a nap." He could be seen on camera leaving the chair at his desk, climbing into his bunk bed, and covering his head with a blanket. Unphased, the teacher continued strumming her guitar and replied calmly, "It's music time, so it might be a little hard to take a nap." As the teacher continued strumming without any further comments to the student, the 5th grader could be seen trying to decide on his next move. He slowly removed the covers, returned to his chair, and reengaged with the music lesson without prompting. He offered ideas for the next line of lyrics in the song they were writing together as a group. The teacher intentionally had ignored the off-task behavior which allowed the student the chance to regulate his own behavior. It was apparent that OpporTUNEity provided ample space for students to demonstrate their own ability to self-regulate and resume an activities without needing explicit redirections from an adult. Self-regulation was clearly an expectation during each lesson, and the

students who were observed rose to the challenge.

Music education has been found to enhance inhibition and the ability to pay attention referred to as "selective attention" (Degé et al*., 2011)*. WPS teachers saw improvements in students' overall engagement during and outside of the program. Students did not want to misbehave, especially on OpporTUNEity days, because they did not want to lose the privilege of participating in the program. "They wanted to behave so they could go to OpporTUNEity. If they misbehaved, they couldn't go to their after school programs." Parents also believe their children behave better because they want to please their teachers at OpporTUNEity. A mother shared, "She doesn't want to act out. She doesn't want to let her teachers or me down." One AMC teacher shared, "I've noticed their growth in attentiveness and participation and focus in programs." Another AMC teacher added:

> I think this program is much much more different, like understanding that this is more
> about fun and more about excitement and their [students'] interest in music rather than a
> lesson or lecture. I think that's kind of what makes the kids come back, like the ones that
> choose to come back every year. And I noticed that whenever they [students] do come to
> us, they are just excited to be able to experience that, and it's really cool to see they're
> interested and excited to show the teachers what they have learned.

AMC teachers noticed increases in students' self-regulation during OpporTUNEity classes, stating, "Some students would act a different way in front of different teachers. They knew which teachers to be on their best behavior for and be respectful. This program made them want to be better." Teachers and parents believe that OpporTUNEity motivates students to exhibit emotional control.

Self-Efficacy

Program participants felt a strong sense of autonomy, agency, and empowerment to not only participate, but to advocate for their participation and that of peers. A sixth grader shared, "One thing that's very fun about OpporTUNEity is freedom about what song you want to sing and what you get to do." OpporTUNEity engages students authentically in learning new songs, instruments, and dances in meaningful ways.

Students believed OpporTUNEity made going to school fun and helped them overcome fears and new challenges. A fifth-grader developed coping strategies to confront the challenge of singing aloud in front of peers. "Most of the time, I would just turn away and just pretend that no one is there. If the camera is on, I just turn my face. On Zoom, I can turn my camera off."

A 4th grader shared, "I feel nervous singing in front of people. Yes, it's [OpporTUNEity] helped. I'm still a little nervous but when we did the concert last year, I was the first one to play the piece" on the piano. Her parent was equally impressed by what she viewed as improvement in her daughter's self-efficacy on full display during a Christmas concert, stating:

> There was one concert they had and those were her people. They're definitely her people. Just the fact that she could get up in front of all of us and play the piano. I told her, 'Of course you can, of course you can.' Kids can sometimes freeze up performing, but that didn't happen to her.

Participants also grew in their self advocacy. One student shared, "I asked my principal from my school and she gave me this paper" to sign up to participate in OpporTUNEity. Another student eagerly shared the program information with his mother, who promptly signed him up to improve his English skills. One AMC teacher at OpporTUNEity described seeing her students

blossom when their " 'I can't' changed to 'I can'... I like seeing people come out of their shell."

Another AMC teacher added, "We had a couple of really shy kiddos who found their voice."

Teachers also noticed growth in students' self-confidence during the program.

> I can think of right off the top of my head of one student who didn't have confidence at the beginning. At the beginning of the program, he said I can't write songs. At the end, they can write songs! (AMC Teacher)

Students' self-confidence was also on full display during musical performances. As one AMC teacher stated:

> They were awesome, so cool to watch. They [students] got to show what they were working on. Last year, they did songs from 'The Greatest Showman.' Some kids had solos. They would sing songs they wrote in Creative Expressions on stage. Teachers helped write, but it was the kids who wrote the songs. Teachers helped turn the pages on the stage. December and May were the 2 shows. You could see their growth. The kids would get all dressed up for it. They really valued the performance. They looked so professional. Sometimes nervous, sometimes excited.

At the same time, teachers also acknowledged the very real impact of Covid on students' self-efficacy during the 2020-2021 school. One AMC commented that students' self-confidence declined during the pandemic due to situational factors beyond the control of students. One AMC teacher shared:

> Last year, I had students who would come in and they would bring the piece of music that they were working on on the piano because they had it in person. I think when we went to online, it was a little different because they didn't have that hands-on piece of paper, and so I think with them not being able to practice as much, they started to believe that they

were not doing as well. But the reality of it was they were only playing once a week rather than going home and having that hands-on music every day. When they practiced regularly, it was so much easier last year. But this year, it was still cool because we were able to still tell them how well they did at class every single week.

Based on feedback from participants and staff within the program, OpporTUNEity appeared to have an impact on the self-efficacy of participants. The pandemic also played a role in current participants' self-confidence and perceptions of their abilities.

Is There a Correlation Between OpporTUNEity and Students' Academic Achievement?

Our second research question examines the potential impact of OpporTUNEity on students' academic achievement. In this context, academic achievement is defined as performance in English Language Arts and Math on standardized tests: the Massachusetts Comprehensive Assessment System (MCAS); STAR Reading and Math benchmark assessments; and report grades in ELA and Math. Administrators had short-term goals of improvement on standardized tests for school turnaround (WPS) and long-term goals of matriculation into arts programs, college, and a career in music education (AMC), which was their driving force for starting the partnership. One AMC administrator stated her long-term goal in the form of this probing question, "Can we get kids to come through this program, into college, and go on to be music teachers?"

MCAS

From 2017-2019, the percentage of all 4th graders meeting or exceeding grade level expectations in ELA at the school we studied increased by 25 percentage-points from 12% to 37%.

Percentage of 4th Graders Meeting/Exceeding Expectations on MCAS ELA 2017-2019
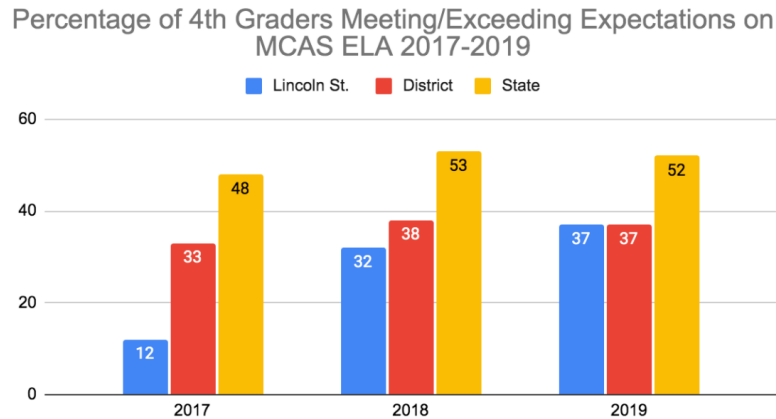
(School and District Profiles, Massachusetts Department of Education)

ELA achievement, according to the most recent MCAS in 2019, reveals 4th grade performance is on par with the district and the gap in performance at the state level has closed from a 36-point difference in 2017 to a 15-point difference in 2020. MCAS results in Math for grade 4 declined. But 5th grade MCAS ELA and Science also showed growth, though not as substantial, at 12 percentage-points and 9 percentage-points respectively.

While overall these improvements are promising, we were unable to connect them explicitly to the introduction of the OpporTUNEity music program to the school. ELA and Math MCAS performance of OpporTUNEity participants vs. non-participants for the administration years were studied. The ELA and Math MCAS assessments were administered in 2018 and 2019 (pretreatment year and first year of treatment/OpporTUNEity program), but not in 2020.

Our analysis found that prior to program participation (2018), OpporTUNEity students performed 4.61 points higher than nonparticipants on the ELA MCAS, and they scored approximately 6.89 points higher than nonparticipants on the Math MCAS:

Table 5
Pretreatment MCAS Scores for ELA and Mathematics (2017-18)

Two-sample t test with equal variances

	obs1	obs2	Mean1 NonPart	Mean2 Part	dif	St Err	t value	p value
ELA1718 by Part: 0 1	38	25	484.553	489.16	-4.607	3.947	-1.15	.247
MATH1718 by Part: 0 1	38	24	477.106	484	-6.894	3.998	-1.7	.089

While overall performance improved in the 2019 administration, nonparticipant means on the ELA MCAS went down slightly while participants' went up, increasing the gap slightly to an 8.73 point performance gap for ELA. Math MCAS performance went up for both groups, but more significantly for participants, yielding a 15.94 points higher difference in means for participants in 2019.   In neither test is the difference in means measured statistically significant.

Table 6

MCAS Comparison in Program Year 1, ELA and Math (2018-19)

Two-sample t test with equal variances

	obs1	obs2	Mean1 NonPart	Mean2 Part	dif	St Err	t value	p value
DiffELAMCAS by Part~1	38	25	-1.526	2.6	-4.127	3.8	-1.1	.282
DiffMathMCAS by Pa~1	38	25	3.5	19.44	-15.94	15.364	-1.05	.303

These tests were run only on students for whom there was an MCAS score in 2018 and 2019 at the identified elementary school. Future studies should be expanded to include middle school assessment data, which was unavailable for this study.

Teachers believed OpporTUNEity may have had some impact on students' academic achievement on standardized tests in previous years, particularly MCAS (WPS) and in their overall confidence as learners (AMC). One teacher shared about 2017 ELA and Math, "There was so much improvement from fall to winter that I thought there was something wrong with the test. I wonder if the OpporTUNEity program had anything to do with it" (OpporTUNEity, 2020).

While the program may have had some impact, other school improvement efforts may have been at play as well. In fact, WPS teachers saw improvements in less measurable aspects of academic progress, particularly routines, time management, homework, musical performance skills, application of math facts, and oral communications. An AMC teacher noted, "I've definitely seen great improvement with their music confidence and their general confidence as students in general" (OpporTUNEity, 2020). Another AMC teacher shared the following:

I think of a student, she's a 6th grader now. She was shy and quiet. In music therapy, we discussed communicating musically. We sat at a piano, and I told her to play the white keys and told her to play a 1-6-5 chord progression. She played it. I saw her smile. After that it just grew.

Worthy of future study are the potential benefits for English Learners (ELs) on their language acquisition and state assessment performance. While at this time no statistically significant impact was found, families of English Learners in this study identified spoken English fluency as an area of growth. They attributed this to regular conversations their children had with college students and peers during sessions, providing them with more opportunities to further develop their oral communication skills and English proficiency. A parent who had immigrated to the U.S. two years prior stated about her son who had participated over two years that, "His English improved in OpporTUNEity." (OpporTUNEity, 2020). These groups could be further analyzed in the future to see whether there is a difference in performance for ELs and/or students with disabilities who participate in OpporTUNEity and who do not participate.

STAR Assessments

STAR Reading and Math benchmark assessment data was collected in 2019 and 2020, the first two years of the OpporTUNEity program. No data was collected in 2018, so we were not able to compare pretreatment differences between program participants and nonparticipants.

2019 STAR Reading mean performance was 9.1 points higher for program participants than nonparticipants. 2019 STAR Math mean performance was 57.77 points higher for program participants than nonparticipants. Neither difference is statistically significant. The difference in

mean performance between the two groups was as follows:

Table 7

2019 STAR Reading and Math Difference in Means between Nonparticipants and Participants

Two-sample t test with equal variances

	obs1	obs2	Mean1 NonPart	Mean2 Part	dif	St Err	t value	p value
STARREAD1819 by Part:~1	17	13	494.588	503.692	-9.104	80.851	-.1	.911
STARMATH1819 by Part:~1	18	14	616.445	674.215	-57.77	41.468	-1.4	.174

A comparison of the change in mean performance of participants vs. nonparticipants from 2019 to 2020 shows a greater increase for OpporTUNEity participants (19.16 points greater) in reading but a 21.19 points greater gain for nonparticipants in math. These differences were not found to be statistically significant.

During observations of the program, students applied mathematical skills during Creative Expressions as they wrote songs and during piano lessons as they played bars and measures of musical scores. Likewise, Creative Expressions and voice lessons were literacy-rich with reading and writing of song lyrics. A 5th grader student attributed his academic improvement to OpporTUNEity, "I got better in reading, writing, and math!"

Table 8

2020 STAR Reading and Math Change in Means between NonParticipants and Participants

Two-sample t test with equal variances

	obs1	obs2	Mean1 NonPart	Mean2 Part	dif	St Err	t value	p value
DiffStarRead by Pa~1	17	13	37.529	56.693	-19.163	35.459	-.55	.593
DiffStarMath by Pa~1	17	14	49.764	29.572	20.194	20.744	.95	.339

Report Card Grades

Several parents reported that their 4th, 5th, and 6th graders were conscientious students in the classroom prior to joining OpporTUNEity, and they continued to excel during their enrollment in the program. To assess whether or not program participation was correlated with higher grades in the areas of English Language Arts and mathematics, we ran *t*-tests to compare pretreatment means of participants and nonparticipants and again to compare post-treatment changes in means. Pretreatment ELA and math grades were slightly higher for participants, but only by three points, which is not statistically significant.

Table 9

2017-18 ELA and Math Grades: Pretreatment Difference in Means between NonParticipants and Participants

Two-sample t test with equal variances

	obs1	obs2	Mean1 NonPart	Mean2 Part	dif	St Err	t value	p value
EngMark1718 by R: ~1	31	15	79.419	82.534	-3.114	2.552	-1.2	.229
MathMark1718 by R:~1	31	15	74.258	77.334	-3.075	2.671	-1.15	.256

A comparison of the change in means for participants vs. nonparticipants yielded no statistically significant differences in the change. From the 2017-18 to the 2018-19 school year, program participants saw a slight ELA grade decrease while nonparticipant grades increased, and participants had a slightly lower Math grade increase than nonparticipants. By contrast, from the 2018-19 to the 2019-20 school year, participants' ELA and Math grades increased slightly more than nonparticipants' grades, though not at a statistically significant level.

Table 10

Change in ELA and Math grade means from 2017/18 to 2018/19

Two-sample t test with equal variances

	obs1	obs2	Mean1 NonPart	Mean2 Part	dif	St Err	t value	p value
DiffEngMark by Par~1	31	15	3.645	-2.534	6.179	3.286	1.9	.067
DiffMathMark by Pa~1	31	15	4.29	1.266	3.023	2.253	1.35	.186

Table 11

Change in ELA and Math grade means from 2018/19- 2019/20

Two-sample t test with equal variances

	obs1	obs2	Mean1 NonPart	Mean2 Part	dif	St Err	t value	p value
DiffEngMark by Par~1	18	14	2.111	4.072	-1.961	3.201	-.6	.545
DiffMathMark by Pa~1	18	14	5.222	8.572	-3.349	1.754	-1.9	.066

At each grade level, correlations were found between students being English Language Learners and lower English marks as well as being students with disabilities and receiving lower English marks, though not statistically significant. While the difference in English grades was not statistically significantly lower for English Language Learners, at least one parent whose home language was not English stated that she enrolled her child in OpporTUNEity in hopes of improving their children's English skills.

Anecdotal data and the literature mentioned earlier suggests that academic benefits may be conferred upon students beyond those measured on report cards. For example, participants, parents, and teachers noted how OpporTUNEity students learned many skills including performance, public speaking, singing new songs, and playing instruments. A 6th grader reported, "I got a little better at piano." The parent of a 4th grader touted, "His English got better. When we first moved here, we didn't speak any English. Now he speaks a lot of English." A 5th grader proudly beamed:

I learned how to read notes. That was something big. I learned different genres of music. I

learned how to play different songs on the piano. Fur Elise. I got some finger cramps. I learned vocal - songs. And I improved my reading, my writing, and math!

WPS teachers also believed the program had long-term academic benefits by exposing students to college and career opportunities. Moreover, participants were able to learn in a higher education setting on a college campus. Participants shared short-term goals of improving musically and long-term goals of wanting to go pursue a career in music, which aligned with the goals of program and school administrators. Participants and their parents said OpporTUNEity influenced their goals:

- ○ "I love singing! I want to be a singer when I grow up." (4th grader)
- ○ "My son says, 'Mommy, I want to go to AMC and be a music teacher!'" (5th grade parent)

Is There a Correlation Between OpporTUNEity and Students' Sense Of Belonging?

Our third research question delves into students' sense of belonging at OpporTUNEity. In this context, sense of belonging is defined by perceptions of acceptance and "fitting in," and is measured by social connections and behavior. We found that the data converged around a key finding that music enrichment does indeed confer nonacademic benefits upon OpporTUNEity participants with regard to their sense of belonging (Eerola & Eerola, 2013). Initial findings indicate a strong sense of family, social connection, and camaraderie in OpporTUNEity. "They're in it together. Older kids helping younger kids. Doing flashcards," reported a WPS teacher. An AMC teacher shared:

"They definitely rely on their peers whenever they come to OpporTUNEity. They always want to be with their friends. Last year, I had to separate two fourth grade students. They

would joke around so much and have so much fun together. I saw they really enjoyed being together, so much that they distracted each other. But I also feel like the music wasn't as much of the focus this year. It was more about their friends and social connections. They would ask if the other kids were jumping online. They really wanted to be with their friends and peers. "

In a recent survey, students shared their feelings of belonging at OpporTUNEity.

43 - Overall, I feel like I belong at OpporTUNEity.
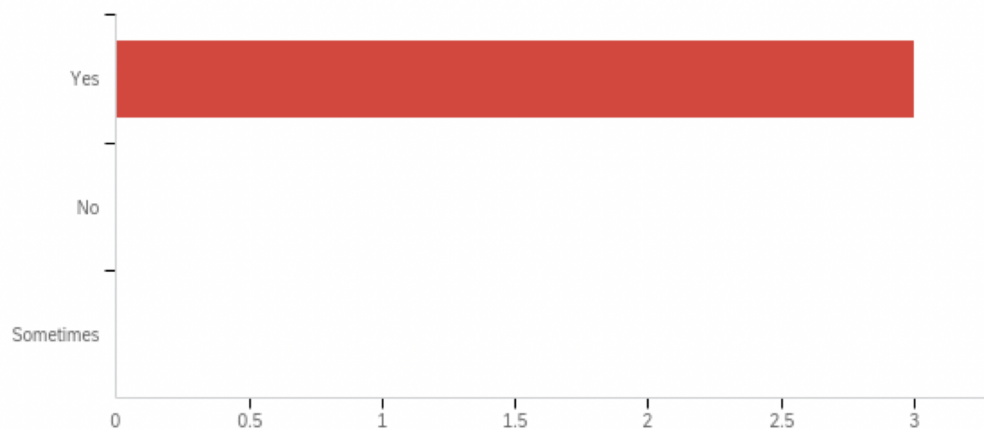
#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Overall, I feel like I belong at OpporTUNEity.	1.00	1.00	1.00	0.00	0.00	3

Given the small sample size *(n=3),* this may not be representative of all students who participate in a typical year. However, it does indicate that at least 50% of participants this year (three out of the six who regularly attended), feel this way. All of the students interviewed shared experiences of fitting in, having friends in OpporTUNEity, and feeling supported by AMC teachers during OpporTUNEity classes and performances. A 6th grader said, "One of my friends

used go to Opportunity with me." A 4th grader said his reason for joining OpporTUNEity was that "I just wanted to have social interactions and make friends." A 5th grader stated, "My best friend lives down the street and he always asks me, what are you doing there? I tell him, 'You should come! It's fun!' He came." A mother shared about her daughter's experiences, "They [OpporTUNEity staff and students] are her people."

Social Connections

Students feel a strong sense of connection, community, and family when they attend OpporTUNEity. Students report that teachers listen to the students and show that they cared. A participant shared about his AMC teachers, "They talk to us. They take time throughout their day to listen to us. And it's crazy because they listen to me and I love talking!" He went on to describe the program as "super fun and super predictive at the same time. You don't get bored because the teachers are really cool and make it fun." When asked about her relationship with OpporTUNEity teachers, another student said, "If students are struggling with the notes, they really help you a lot."

One parent shared, "When she goes to the program, it's all for the social interactions. Before the pandemic, it was perfect for her to build relationships outside of school." Another parent echoed, "It's positive and keeps them interacting with people." A third parent affirmed, "They [AMC teachers] love the kids." She went on to describe her daughter's relationship with her teachers at OpporTUNEity:

> Her sister left for college last year and it was like, what on earth is she going to do? It was like, OpporTUNEity was the best opportunity. She loves spending time with her OpporTUNEity teachers. She [OpporTUNEity teacher] kind of took the place of her big

sister. And now, we have noise and music in the house. It's only the 2 of us in the house. We would've been really bored during the pandemic. (OpporTUNEity, 2020)

Another parent shared her story of immigrating to America two years ago. She and her son spoke no English upon arrival and had no family or friends here. OpporTUNEity became their family and helped them establish relationships and social connections within their community:

To have a good relationship is very important. You have to have good communication. He practices his English and his knowledge was very important for him. Because when I arrived here, I didn't meet people. I didn't know anybody. OpporTUNEity helped us build relationships. (OpporTUNEity, 2020)

AMC teachers took note of the formation of diverse friendship groups across grade levels:

I noticed a lot of inter-grade wise friendships between 4th, 5th, and 6th graders. Seeing people talk to others in other grades, helping with homework, and camaraderie with different ages. Nine-year-olds just becoming self aware versus 13-year-olds who are like, "been there, done that."

Another AMC teacher shared:

There was this group of girls in this one class, every time they came in together, they were connected at the hip. I didn't know if that was from OpporTUNEity or not, but if one didn't show up, the other two were sad. I did see them building friendships that lasted throughout the year.

AMC teachers provided emotional support to cultivate connections, highlighting that, "Last year, students were much more excited to see their teachers and mentors because they would see them in person and get hugs from them before playing the piano or doing whatever in music class" (OpporTUNEity, 2020).

WPS teachers also noted the following trends...

- ○ "There's obviously new kids and those who came back. It became like a family type thing. They were always together. It [OpporTUNEity] gave them a sense of belonging and a place to be."

- ○ "It's just the sense of community. It's such a small community - that's the AMC way in general. It's great to have kids come together and create something bigger together."

- ○ "OpporTUNEity strengthened trust between school and home."

Behavior

Administrators reported only one suspension since 2017. The principal recounted his story:

A student got into some trouble at school on the Dark Web and was referred to the Safety Center after being suspended. Parents sent him back to OpporTUNEity because of too much negativity. It turned his life around. (OpporTUNEity, 2020)

Teachers at WPS reported very few office referrals for students in grades 4-6 over three years, "We have no behavior problems on days when we go [to OpporTUNEity], maybe only once or twice" (OpporTUNEity, 2020). While behavior data is too sparse to determine any statistical significance between participants and nonparticipants, WPS teachers noted that OpporTUNEity participants generally were well-behaved.

Students reported feeling comfortable and connected to their teachers and friends in the program. One student shared, "Me and my friends who went to OpporTUNEity would talk about everything we did and what was our most favorite about it."

Social connections between students were not only horizontal amongst same-grade peers,

but also vertical across multiple grade levels. An AMC teacher shared...

> I noticed a lot of inter-grade wise groups of 3rd through 5th graders. Seeing people talk to others in other grades; helping with homework; camaraderie with different ages; 9-year-olds just becoming self aware versus 13-year-olds who are like, 'been there, done that.' I like seeing people come out of their shell.

One area to be noted in this study is the disparity between WPS student diversity and AMC teacher diversity. OpporTUNEity staff diversity is not currently reflective of participant diversity, with 24% of AMC teachers identifying as people of color and 85% of OpporTUNEity participants identifying as students of color. Themes emerged around the importance of community, language, culture, and identity during student and family interviews. One parent from a middleastern country said, "We are coming from another country, so the culture is different. Students don't talk back to teachers and most of the times, teachers called moms and dads." A caregiver of an OpporTUNEity participant shared, "Last time, we went to school and talked about our culture and talked about Diwali." The caregiver expressed a desire to share their dance and music with OpporTUNEity staff and students. Another parent from South America discussed her challenges coming to the United States without English proficiency and said she signed up her son for OpporTUNEity in hopes of improving his English, learning North American culture, and building community connections.

Recommendations

Overview

The main components of the following proposed changes to OpporTUNEity are based on analysis of quantitative data - standardized tests, attendance records, and behavior reports, as well as qualitative data - anecdotal notes from interviews, surveys, program observations, and extant research, as well a review of the relevant research on successful after-school music enrichment programming.

Recommendations

These recommendations are based on observable data and currently available research. Feasibility of implementation in the current context as well as future contexts which will likely change as public health conditions improve and the pandemic programming offered during the 2020-2021 school year shifts from remote to in-person instructional delivery models. Where the responsibility lies for implementation of the intervention will need to be determined by the organizational structure and leadership. Recommendations can be found below:

1. **Create a database** to collect and record student attendance and contact information for future study of the program's impact. Use consistent metrics from year to year to more effectively track student progress and program growth.

2. **Develop a music curriculum and framework** to increase consistency, replication, and potentially scaling the program. Adopting or designing a music curriculum with guidance from the WPS Arts Director could create alignment between the program's objectives, school improvement efforts, and state standards for music instruction. WPS administrators

concur that adopting a music curriculum and providing clear expectations for the college

students who teach the classes would provide "more structure" benefitting both the AMC

teachers and WPS students alike. Include the WPS Arts Director in developing and

reviewing trainings for them. Moreover, many impactful after school programs using four

evidence-based practices, known by the framework SAFE, exhibit positive student

outcomes: (S) Staff use a sequenced step-by-step training approach; (A) Active forms of

learning are emphasized by having youth practice new skills; (F) Focus specific time and

attention on skill development; (E) Explicit in defining the skills promoted by the

program. Each of these practices has a strong research base in many skill training studies

of youth (Durlak & Weissberg, 2021).

3. **Strategically embed academics and enrichment activities** offered at OpporTUNEity

through continued collaboration with teachers at partner schools. For example,

strategically incorporate English Language Arts standards and units of study covered

during the school day at school into songwriting lessons afterschool at OpporTUNEity.

The best examples of the integration of academic content and enrichment are those in

which academic content is naturally embedded in the enrichment activity, like drama and

English Language Arts (ELA) where students are reading and writing, music where

students use fractions to measure rhythms, and nature explorations where students applied

science concepts (Augustine et al., 2013).

4. **Administer pre- and post-surveys** to collect student and parent benchmark data to

determine the program's impact over time. This also lays the foundation for future studies

of the program and possible program expansion.

   a. Enrollment (pre-) surveys for students and separate pre-surveys for families upon

enrollment into the program (See examples in Appendices C and D)

b. Post-survey for students and a separate post-survey for families at the end of each semester (See examples in Appendices E and F)

5. **Build a shared, distributed, or collective leadership organizational structure** so the program does not solely rely upon one individual, in this case the program director. Without an elected governing body or leadership team, OpporTUNEity currently operates singularly under the direct supervision of the program director. Shared, distributed, and collective leadership are all models that allow a governing group to lead the work collaboratively. Such leadership can emerge from group interactions and behaviors over time, or through formally appointed leadership (Northouse, 2007; CQ Net, 2021). Collective leadership assumes that everyone can and should lead and relies on the establishment of trust, power-sharing, transparency, effective communication, accountability, and shared learning (Dubb et al., 2018). (See Appendices G-I for additional information.)

a. Appoint a board of directors or instructional leadership team. This lightens the load on the program director and allows for replication of the program. Invite key stakeholders to serve on this governing board, including parents, teachers, and community partners. In order to scale the program or replicate it in other contexts, others need to be able to carry this work (Dubb et al., 2018; Northhouse, 2007; CQ Net, 2021).

b. Align structures and practices with the shared mission and vision. This is critical to the future direction of OpporTUNEity, and the responsibility should not rest with a governing body rather than a single individual. The process of alignment lays a

firm foundation and fosters a culture of trust, provides faculty and student stability, and supports caring and positive relationships between students and teachers (Cannata et al., 2013).

6. **Diversify the teaching force** to further cultivate students' sense of belonging. OpporTUNEity staff diversity is currently not reflective of participant diversity, as noted in the findings.

   a. Partner with AMC to recruit more diverse music candidates into the program to bridge the cultural and linguistic gaps (Ladson-Billings, 1994).

   b. Recruit parent volunteers. Interviews revealed families have many musical abilities, are committed to supporting their child and OpporTUNEity, and are interested in becoming more involved to ensure program success and expansion (Education Alliance, 2021; Ladson-Billings, 1994; Farrington, 2013).

   c. Create a multilingual outreach team to connect with hard-to-reach communities and immigrant families. This effort can effectively bridge the language barrier impacting student participation, family involvement, and data collection for program improvement. This outreach team can also support consistent student engagement throughout all aspects of the program, from attendance to participation, for maximum student benefit (Education Alliance, 2021).

7. **Continue efforts to create neutral spaces within students' local communities** by holding OpporTUNEity classes at the local elementary and middle schools, and/or nearby community centers on designated days. OpporTUNEity's mission is to use music as a means of engagement to strengthen ties between elementary, secondary, and higher education by "prioritizing neutral spaces and reciprocal learning" (OpporTUNEity, 2020,

p. 2). OpporTUNEity has gone above and beyond to create neutral spaces within students' community through partnerships with the local housing authority, middle school, and a local church. Efforts are currently underway to create a neutral space at the elementary school served by OpporTUNEity. **Neutral space** is defined as an open space with no dedicated function, role, distinctive characteristics, or type (Benson, 2019; CMBA, 2020). It is important to first acknowledge that no space is inherently neutral and, as a result, has an impact, either directly or indirectly, on individuals occupying the spaces therein (Benson, 2019). The learning spaces we occupy impact us emotionally and psychologically both in the virtual learning context as well as in person. Ideologically, neutral spaces are nearly impossible to create because the space is always governed by the rules and norms of the dominant party. OpporTUNEity has effectively worked to truly reciprocate learning by shifting the balance of power from that of the dominant culture to elevate the influence of the communities of color served by OpporTUNEity on its program design, location, and implementation. Moreover, the neutral spaces created by OpporTUNEity take aim at disrupting the school-to-prison pipeline by funneling resources back into economically disadvantaged and underserved schools and communities (Hickey, 2018). From desegregation to the pandemic, "White flight" and disinvestment in the communities served by OpporTUNEity resulted in a loss of economic and educational resources (Farley, 1980). The neighborhoods served by the elementary school in this study fared worse than most (Wilker, 2020). Poverty and inequitable access to learning opportunities have been linked to school disengagement, high school dropout rates, and criminal activity (Smink, 2021). In fact, students living in high-risk situations, including poverty, demonstrate a high disengagement with school which can start as early as

elementary school or even before enrolling in school (Smink, 2021). Providing music programming within students' neighborhood schools, community centers, and local contexts can reverse the deleterious effects of disinvestment. It can also potentially expand the program's reach by making OpporTUNEity more accessible for families who are uncomfortable with busing their children nearly forty minutes away from home to AMC several days each week.

8. **Use asset-based language** in all written and spoken communications when referring to participants in the program. Focus on what students have and are able to do rather than what they lack and barriers to success. On the website and media releases, participants are described using deficit-based language as "individuals who lack access," "learners who are at risk," and "children living in poverty" (OpporTUNEity, 2020, p. 2). During conversations with OpporTUNEity staff, statements were made such as, "Lifting kids up out of their environment to give them better opportunities," and "I found 4th grade to be the sweet spot - they can act reasonably civilized on the bus." More appropriate designations described by the Department of Elementary and Secondary Education and educational literature include "high needs," "diverse learners," "English Learners," "economically disadvantaged," "demographic groups," and "students of color" (MA DESE, 2021). More importantly, describing students' potential beyond their current status can be empowering, using descriptors such as, "talented," "promising," "vibrant," "eager," "resilient," and "individuals showing promise." Beware of how implicit biases may color the lens through which participants are seen. Positive academic mindsets motivate students to persist, communicate belief in students' abilities, and strengthen their self-efficacy and self-determination (Farrington, 2012; Evans, 2015; Christle, 2005;

Durlak & Weissberg, 2021). Develop students' innate talents and natural abilities. Continue celebrating students' strengths through performances. Extend these performances into their neighborhood schools and local contexts to further enrich their communities and allow opportunities to give back to their communities.

9. **Dosage** - Year 1 of the program in 2018-2019, the dosage was 1x120 minutes per week. Year 2 (2019-2020), the fall dosage was up to 3x120 min./week with different students attending on different days of the week. For example, 10 students attended on Tuesdays, Wednesdays, and Thursdays while 23 students attended on Wednesdays only. Half of the students had perfect attendance while the remainder had absences ranging from 1-5 absences. By spring of 2020, dosage was as high as 4x120 min./week for some students. During the 2020-2021 school year (Year 3), students received an average dosage of 3x120 min. per week. However, there was significant variance with some students missing some sessions or not participating in all aspects, such as tutoring/homework help, as observed by researchers. It should be noted that attendance records are incomplete. We recommend that OpporTUNEity encourage families to participate consistently every day the program is offered since higher dosages can lead to greater impact than lower dosages (Strait & Kraus, 2014; Vandell, 2014). The positive social and academic outcomes from afterschool programming may not fully emerge unless there is regular dosage, adequately trained staff, and high-quality programming (Vandell, 2013; Wallace, 2020). All students, particularly those with behavioral issues, can benefit from structured music therapy programs like OpporTUNEity, though the positive changes in their emotional and behavioral problems may not necessarily influence academic competency (Hickey, 2018; Chong & Kim, 2010).

10. **Consider strategic planning for program expansion.** If OpporTUNEity plans to scale up in the future, it would be helpful to develop a 5-year strategic plan collaboratively with the leadership team or board of directors to scale OpporTUNEity using data from this and future reports (Education Through Music, 2017; Education Through Music, 2018). Participants, families, and instructors are all inspired and eager to aid in program growth. Increase the number of days per week the program is offered. Consider increasing the number of days per week the program is offered, opening up the program to more students in earlier grades, or partnering with other schools.

Conclusions

The program evaluation of OpporTUNEity Music Connections was conducted to determine the impact on students' academic achievement, motivation, and sense of belonging. Analyses of students' performance on standardized tests in reading and math revealed statistically insignificant gains academically. However, interviews, surveys, and anecdotal experiences of program participants, their families, teachers, and administrators told a story of inspiration and motivation, creating a sense of belonging. Several students shared college aspirations and dreams of future musical pursuits. Reviews of program artifacts, documents, and social media highlighted wraparound supports for elementary and middle school from community partners to disrupt the school-to-prison pipeline.

Our study limitations include this year's sudden drop in program participation due to the Covid-19 pandemic that closed the elementary school to in-person learning and moved the entire OpporTUNEity program online. In a typical year, OpporTUNEity serves anywhere from 30-50 students. During the pandemic, enrollment dropped to fewer than 10 students, with consistent participation even lower. Due to the small sample size during the school year 2020-2021, recent data collected is only a snapshot of the current unique situation and should be taken as such. To address this limitation, we reached out to program participants from the previous two years of the program but with limited success. Obtaining qualitative data proved to be challenging, as only one past participant responded to requests to provide information about their experiences.

Quantitative data limitations include the lack of consistent available data from year to year. The only data available for all three years of our analysis (2017-18 through 2019-20) were

attendance and course grades, so none of the standardized achievement data could be consistently examined. We had pretreatment data (2017-18) in the areas of attendance, grades, and MCAS performance, but not for the STAR benchmark assessments, so we could not account for between-group differences that predate participation in OpporTUNEity on those benchmark assessments. Additionally, no MCAS data is available for the 2019-20 school year due to its cancellation (due to Covid-19), so that data only reflects one year of the program's impact. Furthermore, the overall impact of Covid-19 on student instruction and achievement is still unknown, but its disruption to classroom instruction is another variable that may have had an outsized impact on student learning and course grades during the 2019-20 school year and may again in the 2020-21 school year, making course grade analysis unreliable during those school years.

Despite these limitations, this early program evaluation sets the stage for a long-term analysis as the program continues and data analysis can follow students through middle and high school. The program is still early in its implementation and persists in inspiring and enriching students. Assuming attendance rebounds and the program continues as designed, there will be a much more significant number of students and parents to interview and survey from year to year, which will serve the purpose of informing program direction as well as documenting its impact. Assuming state assessments resume this and/or in future years, there should be a more robust data set for analysis.

Over time, a continued analysis of this program has the potential to contribute to the research on the social and behavioral impact of music enrichment programs on elementary and middle school students in higher-needs schools. If the program is delivered with consistency of curriculum without significant interruptions as were seen from March 2020 through March 2021,

student achievement data can be more reliably measured.   The small sample interviewed this year supported prior research demonstrating the impact of music enrichment in areas including social cohesion and self-esteem. The body of research on music enrichment's impact on academic achievement is mixed and does not consistently suggest a measurable impact on standardized assessments of reading and math. Similarly, we did not see a statistically significant impact in our own quantitative data, but it should be noted that modest gains in academic achievement in this study, though not statistically significant, have occurred.

Qualitative data analysis yielded promising results. We acknowledge that standardized tests are limited in their scope of assessing the full end-user experience of music enrichment programs. There are many immeasurable aspects of human intelligence and learners' educational experiences, and there were significant positive perceptions of the program's nonacademic benefits reported by participants, their families, teachers, and administrators. These multifaceted benefits typically engendered "soft skills" that are not academic in nature, such as motivation, self-regulation, self-efficacy, social connections, and behavior. Continued analysis is recommended in order to see whether there is an impact over time in the absence of a disruption the magnitude of the current pandemic.

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APPENDICES

Appendix A

Descriptive Statistics

Our sample population includes all students registered at an elementary school in the northeastern United States in grades 4-6 during the years 2017-18, 2018-19, and 2019-20 school years for whom we attained at least two consecutive years' worth of attendance and performance data during that period. Quantitative data is not yet available for the 2020-21 school year, so only qualitative data is used for that year. This table includes all cases studied in the first two years of the program's implementation described by the following variables: Grade (grade level), Opp_Participant (OpporTUNEity participant), Race_Ethnicity, Gender, EcoDis (economically disadvantaged), EL (English language learner), and SwD (student with a disability).

Summary Statistics Table for Frequency Table for Nominal and Ordinal Variables

Variable	18/19 School Year Analysis		19/20 School Year Analysis	
	n	**%**	**n**	**%**
Grade				
4	17	26.98		
5	15	23.8	18	56.25
6	31	49.2	14	43.75
Opp_Participant				
Yes	25	39.68	14	43.75
No	38	60.3	18	56.25
Race_Ethnicity				

American Indian or Alaska Native	0	0.00	0	0
Asian	3	4.76	2	6.25
Black or African American	14	22.22	9	28.13
Hispanic or Latino	35	55.56	14	43.75
Multi-Race, Non-Hispanic	3	4.76	1	3.13
White	8	12.7	6	18.75
Gender				
Male	21	33.33	11	34.38
Female	42	66.67	21	65.53
EcoDis				
Yes	50	79.37	25	78.13
No	13	20.63	7	21.88
EL				
No	30	47.62	13	40.63
Yes	33	52.38	19	59.38
SwD				
No	54	85.71	27	84.38
Yes	9	14.29	5	15.63

Appendix B

Interview Protocols

Interview protocols and questions for:

Interview Protocols and Questions

Teachers and students may participate individually or in small focus groups. They will be interviewed by phone or videoconference at a mutually available time. Students will be in the supervision of a parent, guardian, or WPS/AMC staff member. Interviews will be recorded via notes taken by the researchers. All names will be changed for the purpose of data collection, analysis, and publication. Each interview will begin with a confirmation that the participant is willing to participate in the interview, the opportunity to ask any questions before we begin, and an informal question/icebreaker such as what the participant's favorite instrument, genre of music, or ice cream flavor is. Interviews will end with a thank you for participating and an offer to answer any additional questions.

Opening statements to include: Hello, my name is _____, and I am researching the OpporTUNEity music program for Vanderbilt University. We would like to find out more about the program and what its effects are. This is a voluntary interview and you are welcome to end it at any time. I will be taking notes, and your name will not be used in my notes. You may stop the interview at any time. Are you ready to answer some questions about OpporTUNEity? Concluding statements to include: Thank you for participating in this interview! Do you have any questions for me?

Questions for WPS Teachers

- How long have you worked at this school?
- What do you know about the OpporTUNEity program? Is the program being implemented as you expected?
- How are students recruited for the OpporTUNEity music program? What is your role in recruitment? Why do some students not participate?
- What impact, if any, does participation in OpporTUNEity have on your students?
  - Have you seen any impact on student attendance?

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- ○ On student behavior?
- ○ On their sense of belief in themselves and their ability to achieve their goals?
- ○ On their sense of belonging? On their friendships or connections with their peers?
- If so, what is it about the program that you think leads to these outcomes?
- Is there anything else about this program or its impact that you would like to share?

Questions for Anna Maria College Teachers (OpporTUNEity Program Teachers)

- What is your role in the OpporTUNEity program?
- What does the program look like when the students are with you? Can you describe what is happening?
- What impact, if any, does participation in OpporTUNEity have on your students?
  - ○ Have you seen any impact on student attendance?
  - ○ On student behavior?
  - ○ On their belief in themselves and their ability to achieve their goals?
  - ○ On their sense of belonging? On their friendships or connections with their peers?
- If so, what is it about the program that you think leads to these outcomes?
- Is there anything else about this program or its impact that you would like to share?

Questions for School Administrators

- Schools establish a variety of community partnerships. Why OpporTUNEity?
- What can you tell us about the program?
- Why are you willing to invest the time into this program?
- How do you expect this program to impact students? Your school?
- Is this program meeting your expectations?
  - ○ If yes, in what ways?
  - ○ If not, what could be better? What would you like to see?
- How are students recruited for the OpporTUNEity music program? What is your role in recruitment? Why do some students not participate?
- What observable impact, if any, has participation in OpporTUNEity had on your students?
  - ○ Have you seen any impact on student attendance?
  - ○ On student behavior?
  - ○ On their sense of belief in themselves and their ability to achieve their goals?
  - ○ On their sense of belonging? On their friendships or connections with their peers?
- If so, what is it about the program that you think leads to these outcomes?
- Is there anything else about this program or its impact that you would like to share?

Questions for Program Administrators

- What is your role in the OpporTUNEity program?
- Describe the program.
  - When and how do students participate? What do they do when they are participating?
  - Who teaches the music portion of the program? The tutoring portion?
    - What is the demographic makeup of the teachers?
      - Age, race, educational level, geographic location of residence
      - Musical experience, teaching experience
    - Do the teachers perform any duties in addition to teaching? In what other ways do they interact with students and/or parents?
- What impact, if any, does OpporTUNEity have on your students?
  - Have you seen any impact on student attendance?
  - On student behavior?
  - On their belief in themselves and their ability to achieve their goals?
  - On their sense of belonging? On their friendships or connections with their peers?
  - On student motivation to attend school?
- If so, what is it about the program that you think leads to these outcomes?
- Are there any other outcomes you would like us to be aware of or suggest we examine?
- Is there anything else about this program or its impact that you would like to share?

Questions for Parents/Guardians
- Why did you enroll your child in OpporTUNEity?
- What do you know about the program?
- What does your child do in the program?
- What do you like or not like about the program?
- How long has your child participated in this program?
- How do you expect this program to benefit your child?
- Is this program meeting your expectations?
- Has this program impacted your child? If yes, in what ways?
  - Has the program had any impact on your child's attendance?
  - On their behaviors? At home or in school?
  - On their desire to go to school?
  - On their academic performance in school?
  - On their sense of belief in themselves and their ability to achieve their goals?
  - On their sense of belonging?
    - On their friendships or connections with their peers?

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- On their connections with their teachers? Teachers at the program? At their school?
    - If so, what is it about the program you think brought about this change?
    - Is there anything you would change about the program? If so, what would you like to see?
- Has this program impacted your relationship with your child's school? Has it changed your sense of connection to the school? If so, what is it about the program that you think led to that change?
- How was your child selected to be in this program?
- Do you have any future plans with your child participating in OpporTUNEity?
    - If so, would you mind sharing?
- Is there anything else about this program or its impact on your child that you would like to share?

<u>Questions for Program Participants</u>
- Tell me about OpporTUNEity. What do you do when you attend this program?
- What is your favorite part about going to OpporTUNEity?
- What have you learned in this program?
- Have you made any new friendships at OpporTUNEity?
- Do you enjoy talking to the teachers there?
- Do your teachers listen to you? Do the teachers care about the students there?
- Why do you participate in OpporTUNEity?
- How long have you participated in this program?
- How did you become a part of this program?
    - Did you ask to be in the program?
    - Were you chosen to be in the program?
    - Did you hear about it from a friend?
- What do you want to learn in this program?
- What's the hardest/most challenging part of the program? What do you do when you face a difficult challenge like that?
- Do you talk about this program outside of OpporTUNEity? Who do you talk with about it? Classmates in the program? Classmates not in the program? Family members? Teachers?
- Is there anything you would change about your music program?
- Has OpporTUNEity changed you in any way? Has it helped you?
- What do you think about the tutoring? Has that helped you with your classwork?
- Do you like attending OpporTUNEity?
- Do you plan to participate in OpporTUNEity next year?
- Is there anything else about this program that you would like to share?

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Appendix C

Enrollment Survey for OpporTUNEity Students

- Why did you choose to participate in OpporTUNEity?
- How did you hear about OpporTUNEity?
  - From my teacher or principal
  - From a friend
  - Other
- What do you want to learn in this program? Please state your goal(s).
- Which OpporTUNEity classes would you like to participate in? (Select all that apply).
  - Creative Expressions
  - Choir
  - Piano
  - Technology
  - Tutoring/Homework Help
- Please provide your contact information:
- Name (first & last)
- Grade level
- School
- Home address
- Mailing address
- Email address
- Phone Number
- Preferred Home Language

Appendix D

Enrollment Survey for OpporTUNEity Families

- Why did you choose OpporTUNEity for your child?
- How did you hear about OpporTUNEity?
  - From my child
  - From the school
  - From a friend
  - Other
- What do you want your child to learn in this program? Please state your goal(s).
- Which OpporTUNEity classes would you like your child to participate in? (Select all that apply).
  - Creative Expressions
  - Choir
  - Piano
  - Technology
  - Tutoring/Homework Help

Please provide your contact information:
- Name (first & last)
- Child's Grade level
- School
- Home address
- Mailing address
- Email address
- Phone Number
- Preferred Home Language

Appendix E
Post-Survey for OpporTUNEity Students

How would you rate the following services at OpporTUNEity?

	Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied	Not Applicable
Creative Expressions						
Choir						
Piano						
Technology						
Tutoring						
AMC Teachers						
Transportation						
Communication						
Meals/Snacks						

Satisfaction

- Which OpporTUNEity classes did you participate in this semester?
- Does OpporTUNEity help you achieve your goals?
- Do you plan to participate in OpporTUNEity next semester? (Why/Why Not?)
- What is your favorite part of OpporTUNEity?
- What could be better?
- Would you recommend OpporTUNEity to a friend?

Demographics

- How old are you?
- What grade are you in?
- What school do you attend?
- On average, how many days each week did you participate in OpporTUNEity this semester?
- How long have you participated in OpporTUNEity?

Appendix F

Post-Survey for OpporTUNEity Families

How would you rate the following services at OpporTUNEity?

	Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied	Not Applicable
Creative Expressions						
Choir						
Piano						
Technology						
Tutoring						
AMC Teachers						
Transportation						
Communication						
Meals/Snacks						

Satisfaction

- On average, how many days per week did your child participate in OpporTUNEity this semester?
- Does OpporTUNEity help your child achieve their goals?
- Will your child participate in OpporTUNEity next semester? (Why/Why Not?)
- What is your favorite part of OpporTUNEity?
- What would you improve if you could?
- Would you recommend OpporTUNEity to a friend?

Demographics
- Describe your background. (Race/Ethnicity)
- What is your family's home language?
- How long has your child participated in OpporTUNEity?

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Appendix G

Distributed Leadership Models

"In a distributed leadership model, leadership responsibilities and accountability are shared by those with relevant skills and expertise, rather than resting with an individual." (National College for Teaching & Leadership, 2013). Distributed leadership is sometimes used interchangeably with shared leadership; however, they differ slightly in the formation of the leadership structure, with distributed leadership being somewhat more formalized (Northouse, 2007; CQ Net, 2021). In educational settings, distributed leadership should focus on developing multiple leaders with a goal of improving the quality of teaching, learning and student outcomes. Sometimes known as 'delegated' or 'shared' leadership, it is based on three key ideas:

1. "The belief in leadership teams where belief in the power of one gives way to belief in the power of everyone;

2. "Increased demand for leaders as schools become more complex places to manage and lead;

3. "Creating pools of talent from which we can grow tomorrow's leaders" (National College for Teaching & Leadership, 2013)

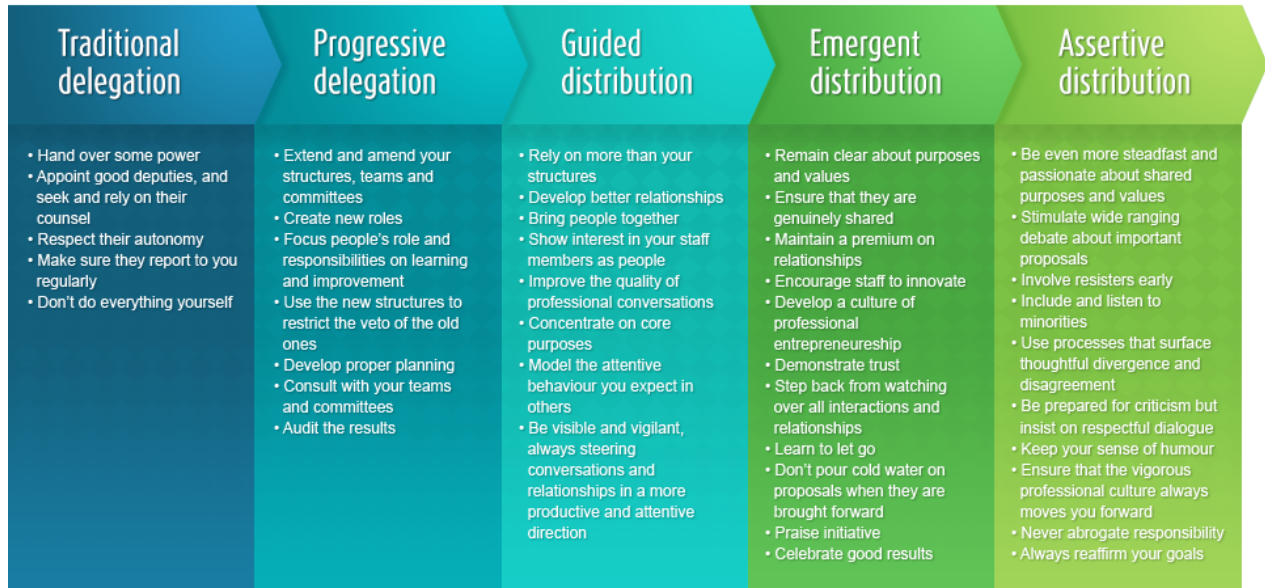| Dean's eight hallmarks of distributed leadership	
Shared responsibility	whereby leadership is viewed in terms of the collective behaviour of many individuals rather than a designated role
Shared power and authority	whereas traditional notions of leadership focus on command and control, distributed leadership is more concerned with empowerment, participation and co-operation

Synergy	where under distributed leadership, decision-making is decentralised, with individuals engaging in collaborative activities and willingly sharing or overlapping roles with others whose skills and knowledge complement their own
Leadership capacity	in that organisations with distributed leadership benefit from the collective knowledge and skills of their leadership participants, giving them greater leadership capacity than traditionally led organisations
Organizational learning	in that according to Senge (1996), where leadership and decision-making are distributed throughout an organisation, senior leaders have a responsibility to contribute to the quality of thinking throughout the organisation. How they work with their own teams serves as an example of how this can be replicated throughout the organisation
An equitable and ethical climate	where distributed leadership tends to involve a wider range of stakeholders in the decision-making process, thereby reducing the likelihood that ill-considered or unethical decisions are made
A democratic and investigative culture	as the cumulative result of shared responsibility, shared power and authority, and an ethical and organisational learning culture
Macro-community engagement	in that many organisations that practise distributed leadership appreciate that part of their leadership capacity lies in their ability to understand and contribute to an increasingly complex internal

	and external environment, over which they can have little real leadership control

A continuum of distributed leadership

Source: Hargreaves & Fink, 2006, p138

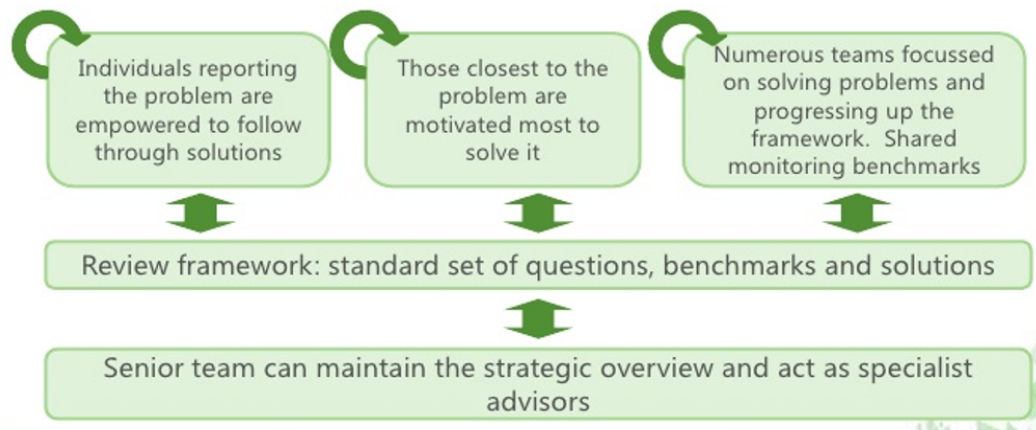| Traditional delegation	Progressive delegation	Guided distribution	Emergent distribution	Assertive distribution
• Hand over some power • Appoint good deputies, and seek and rely on their counsel • Respect their autonomy • Make sure they report to you regularly • Don't do everything yourself	• Extend and amend your structures, teams and committees • Create new roles • Focus people's role and responsibilities on learning and improvement • Use the new structures to restrict the veto of the old ones • Develop proper planning • Consult with your teams and committees • Audit the results	• Rely on more than your structures • Develop better relationships • Bring people together • Show interest in your staff members as people • Improve the quality of professional conversations • Concentrate on core purposes • Model the attentive behaviour you expect in others • Be visible and vigilant, always steering conversations and relationships in a more productive and attentive direction	• Remain clear about purposes and values • Ensure that they are genuinely shared • Maintain a premium on relationships • Encourage staff to innovate • Develop a culture of professional entrepreneureship • Demonstrate trust • Step back from watching over all interactions and relationships • Learn to let go • Don't pour cold water on proposals when they are brought forward • Praise initiative • Celebrate good results	• Be even more steadfast and passionate about shared purposes and values • Stimulate wide ranging debate about important proposals • Involve resisters early • Include and listen to minorities • Use processes that surface thoughtful divergence and disagreement • Be prepared for criticism but insist on respectful dialogue • Keep your sense of humour • Ensure that the vigorous professional culture always moves you forward • Never abrogate responsibility • Always reaffirm your goals

(National College for Teaching & Leadership, 2021)

The distributed leadership model

- Like a self-repairing system, those with the greatest knowledge of problems are empowered to investigate, recommend and find solutions.
- The clarity of the framework is critical if all of these efforts are to be coordinated and efficient, without repetition of effort.

Individuals reporting the problem are empowered to follow through solutions

Those closest to the problem are motivated most to solve it

Numerous teams focussed on solving problems and progressing up the framework. Shared monitoring benchmarks

Review framework: standard set of questions, benchmarks and solutions

Senior team can maintain the strategic overview and act as specialist advisors

Source : http://www.slideshare.net/Buckleydan/2012-07-leadership-at-every-level-tasmania-workshop-dan-buckley (downloaded on 21 oct 2015)

Appendix H

Shared Leadership Models

Shared leadership and distributed leadership have the same core components but differ slightly in the notion that leadership arises from group cognitions, interactions, and behaviors rather than through a formally appointed leader or group of leaders. Shared leadership is commonly thought of as the gradual emergence of multiple leaders over the life of a team, stemming from interactions among team members in which at least one team member tries to influence other members or the team in general (Northouse, 2007; CQ Net, 2021).

Figure 2. Conditions to Enable Shared Leadership

(CQ Net, 2021; Holcombe & Kezar, 2017)

Appendix I

Collective Leadership Models

In collective leadership, key stakeholders share responsibility, decision making, accountability, and authentic engagement. All members collaboratively create the vision with a commitment to working together to achieve a shared vision. Collective leadership is based on the assumption that everyone can and should lead and requires certain conditions for ultimate success: trust, power-sharing, transparency, effective communication, accountability, and shared learning. Organizational and programmatic success depends on the leadership within the entire group rather than the skills of one person (Dubb et al., 2018).

Comparison of Traditional and Collective Leadership		
	Traditional leadership	**Collective leadership**
View of organizations	Organizations as machines	Organizations as systems
Structure	Hierarchy, pyramid	Connected networks
Decision making	Top-down	Shared and/or rotated
Assumptions about people's capacity	People need to be told what to do	People are inherently capable and can be trusted to do the right thing
Beliefs about how success is created	One person has the skill or talent to create success	Success comes from the diverse perspectives and skills of many

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