# Intra-District School Choice Program on Student Achievement for a Low Performing Urban School District in NE Ohio

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# Intra-District School Choice Program on Student Achievement for One Low Performing Urban School District

## Introduction

With a heightened focus on transforming under-achieving schools and districts, Educational Service Centers are increasingly playing a role in supporting transformation best practices in struggling schools. It is imperative that these transformation efforts focus on the needs of the district, while also considering what motivates students, parents, and communities in the transformation process. Presently the transformation discussion has been emphasizing best instructional practices, continuous professional development, curriculum mapping and alignment, collection of informative data, teacher evaluations and more on how students obtain knowledge. This investigation offers a look at the missing ingredient in the present transformation model. The results of this investigation suggests that Educational Service Centers can play an even larger role in helping under-achieving schools and districts with the design and support of "intra-district" choice that challenges traditional transformation thinking. This study focuses on what happens with student achievement when parents and students are given an "intra-district choice" that embraces a constructivist pedagogy, student voice, and embedded technology in the construction of knowledge. The Mahoning County Educational Service Center, through its Department of Teaching and Learning, functions as a "best practice" think-tank for its districts and embraces this transformation model.

#### **Intra-District vs. Inter-District Choice**

Since the early 1990s, the public educational system in America has seen the most significant change in its history with the emergence of schools and programs of choice

serving to reshape the educational landscape (Weil, 2000). Studying student achievement associated with school choice is complicated by a number of factors. Generally speaking, there are six choice models: vouchers/tuition tax credits, charter schools, cyber schools, home schooling, inter-district choice, and intra-district choice (including magnet schools and district, open enrollment plans). Few studies have examined the effects of intra-district choice programs on student achievement in inner-city public schools. Much of the school choice research has focused upon effects associated with charter schools, voucher programs, and inter-district choice. This is despite the fact that the second most popular form of school choice is intra-district (Cullen, Jacob, & Levitt, 2005; Ryan & Heise, 2001).

Today, there is an ongoing debate surrounding public school policy encompassing both inter-district and intra-district choice. The present political conversation focuses on what transformation of failing districts or schools would look like if parents were provided choices where their children will attend school. As stated by West (1989), there is an argument to be considered that competition created by intra-district choice may not have the same impact as inter-district choice. For example, Hoxby (2003) suggested that when a school's fiscal dependency is based on student enrollment, administrators would not actively participate in promoting students to leave their school, making it less likely to happen, and, therefore, the choice intra-district schools would less likely experience an impact in student achievement. Flicek (2007, p.4) stated that an intra-district type magnet school "may amount to just token choice... since..." seats are usually limited, coupled with admittance requirements limiting choice option. Ryan and Heise (2001) also stated, choice involving every parent selecting a school for their children would be a major shift from school enrollment being primarily a function of a student's address. For the purpose of this research, choice will only refer to the program choice embedded within a district in the

third through eighth grade without restrictions, but, requiring an application, and not to be confused with other parental choices, such as inter-district open enrollment, charter schools, cyber schools, and parochial options.

Because of the variance in what an intra-district choice program can look like from district to district, there are limited conclusions that can be used for program replication. Studies on student achievement involved with intra-district school choice have been limited by researchers' access to student-level data and availability of relatively similar evidence that can be linked from year to year. Also, the central issue of parent displeasure is the motivation for creating inter-district choice programs in an effort to slow the outward migration of students. School choice research on charter school or inter-district competition predicts an approximate 1% increase in state tests' scores, which constitutes about one quarter of the average yearly growth (Hoxby, 2003). Although parent displeasure could be a major factor in students leaving the Youngstown City School District, this study is not focused on the performance of the students leaving, but more specifically on the achievement of students who have opted to either stay in their neighborhood school or have selected an intra-district choice program.

Few studies of intra-district choice are known to exist in the current literature. Betebenner, Howe, and Foster (2005) investigated the impact of choice in an intra-district, open enrollment system on student achievement and patterns of student enrollment. Students in the district they studied were assigned neighborhood/home schools, but were able to attend schools other than their neighborhood school on a space-available condition. Betebenner et al. (2005) failed to find support for the contention that the achievement of students participating in choice within an intra-district open enrollment system would improve. Specifically, reading achievement of the students who opted out of the home

school did not benefit, and math achievement showed benefit only for the lowest achieving students in the group.

Cullen et al. (2005) recently studied open enrollment among high school students in Chicago Public Schools. The open enrollment system there was quite robust in that approximately half of all high school students in Chicago Public Schools opted for schools outside of their neighborhood. At the time of the Cullen et al. study, few restrictions were placed on students' choices within Chicago Public Schools. Students were guaranteed slots in neighborhood schools, but were free to apply to other schools. Unfortunately, this study found little to no impact on student achievement.

Similarly, the Tulsa Public School District adopted an intra-district transfer policy that allowed students the option to transfer from their traditional or neighborhood school to any other traditional or neighborhood school within the district, so long as the receiving school had room to accept the transfer (Tulsa Public Schools, 2007). Interviews with school administrators indicated that, often, the exact opposite was true. Many of the students who switched schools under the Tulsa Public School open transfer policy were troublemakers at their previous school, and because administrators could not screen applicants under the transfer policy, school principals were not motivated to pursue transfers.

A number of scholars concluded that when charter schools attract troubled students with disciplinary problems, public schools are much less likely to significantly change or improve (Hess, Maranto, & Milliman, 2001). This research suggests that, for similar reasons, intra-district policies may be limited in motivating public school administrators to innovate or become reform oriented. Because administrators perceive no real benefit to increasing the number of transfers they receive, the intra-district transfer policy in Tulsa

had a negligible impact on the perspective of many principals' school improvement leadership. The existing literature proposes that, with the exception of students enrolling in charter schools aimed at those with special needs, the students most likely to utilize transfer options tend to be highly desirable students who possess superior academic motivation and are interested in transferring in order to gain access to better educational opportunities (Cullen, Jacob, & Levitt, 2005; Witte, 1996).

This was the impetus behind the *Discovery Program* that is the focus of this investigation. The *Discovery Program* is an intra-district choice program that is not a separate school, but a program extension of the home school. All academic, discipline, and attendance data remain part of the home school data. This resulted in a parental/student choice that was made for programmatic reasons. The purpose of the current investigation was not to explore or explain the large differences in performance among diverse forms of school choice. Instead, it was aimed to examine whether the *Discovery Program*, a specific, intra-district choice program in a struggling, inner-city school district is likely to result in higher levels of student achievement that meet or surpass expected average yearly growth.

#### **Discovery Program** Components

The *Discovery Program* pedagogy introduced a constructivist approach toward learning along with a technology integrated curriculum. The *Discovery Program* constructivist, student-centered approach places more focus on students' learning than on teachers' teaching. Lindfors (1984) advised that how we teach should originate from how students learn. From a constructivist view, knowing occurs by a process of construction by the knower. What is essentially involved in constructivist strategies and activities is a process approach to learning. Applebee (1993) remarked that "rather than emphasizing characteristics of the final products, process-oriented instruction focuses on the language and problem-solving strategies that students need to learn in order to generate those products" (p. 5). In a process approach, Langer and Applebee (1987) explained a context is created within which students are able to explore new ideas and experiences. The 21st Century Learning Skills 4Cs' (critical thinking, communication, collaboration, and creativity) outcomes that were introduced in the *Discovery Program* are supported by standards/assessments, curriculum/instruction, and professional development designed to engage student learning representative of the Partnership for the 21st Century Learning and Innovation Skills (2006).

Embedding the use of technology as a tool for exploring a range of learning opportunities is the second fundamental component of the *Discovery Program*. Embedding technology in the classroom, as indicated by the existing research, requires teachers to learn. The research demonstrates when teachers use technology to support student learning, they rely on a special kind of technology knowledge grounded in teaching (Thompson & Mishra, 2007).

The *Discovery* Technology Lab uses INVENTOR cloud technology (Invent3D, 2016) as a support in all classroom activities. Using this technology framework provides teachers with an opportunity to challenge students, individually and as teams, to collaborate, design, invent, create, and solve real-world challenges. Penuel and Means (2004) showed the importance of high quality school technology in the success of inquiry-based, technology-enhanced instruction. The primary focus and objective of the INVENTOR cloud program is to impart analytical thinking and problem-solving skills combined with curiosity as fundamental life skills used, challenging teachers to lead

students in the construction of knowledge, all of which fit in the TPACK framework (Songer, 2002). Songer found that favorable school technology, administration support, and student experience were correlated with performance gains. A significant amount of skill development in this area was provided to the staff the summer before the start of the program and continued during the first year.

Lastly, there is a significant amount of research that suggests school climate, the third component in the *Discovery Program*, is a considerable factor in student outcomes and a school's overall performance. School climate is a complex, multi-dimensional phenomenon which influences many aspects of the school and the greater community in which it resides (Marshall, 2004). This third fundamental component of the *Discovery Program* deals with creating the necessary relationships that supports a learning environment that embraces discovering knowledge for all students.

Relationship gaps between teachers and students can be identified in any learning community. The research indicates that there are three kinds of gaps: expectation, relationship, and participation that impact student achievement (Quaglia & Fox, 2003). The first gap is created by the differing expectations that teachers hold for individual students and themselves. Teachers do not approach all students with the same assumptions about their potential; they are often influenced by whether a student is enrolled in advanced courses or on track for college. Less than one-third of teachers believe schools should expect all students to meet high academic standards and graduate with the skills for college-level work (Bridgeland, Dilulio, & Balfanz, 2009).

The second aspect of this gap involves the difference between students' expectations of themselves and what they perceive to be teachers' opinions of their potential. Looking closer at students' perspectives has shown that strong relationships with

teachers are crucial. The quality of teacher relationships seems to be correlated to how much effort students put forth in their school work, and, indeed, research indicates that effort is more important than innate ability when it comes to achievement (Dweck, 2006). As both the number of standardized tests and the stakes related to passing them increase, student effort must keep pace. Survey results imply that teacher relationships with students help increase their effort, which is consistent with research showing that the relationships students have with teachers is one of the best predictors of hard work and engagement in school (Osterman, 2000).

The participation gap is the third area of focus on school climate the *Discovery Program*. This is the gulf in opportunity and advantage between those few students who are actively engaged in their classes and the life of the school, and the many others who are not. For students who are enthusiastic at high levels, learning should be an adventure, rather than a chore. The Quaglia MyVoice survey results reflect how urgent it is to change features of the typical school environment that contribute to the participation gap. In traditional schools, there is little room for a student's voice to actually be heard, let alone become part of the change discussion. This is not true in the design of the *Discovery Program*.

## Unique to Discovery Program

The *Discovery Program* selection process required that an application be completed by the parent, and included a review of attendance and previous discipline data. Although, during the two years of data collection, no student was denied access if the application was submitted on time, self-selection for other reasons outside of the district's process, potentially occurred. Attendance and transportation to the *Discovery Program* may have limited family/student participation because it may have created a situation where siblings

would be attending multiple locations. This may have led to disruptions with after school child care accommodations that were too challenging for some families to overcome. These two factors may have influenced the decision of whether or not to submit an application. Although a recruiting strategy targeted direct contact with students and parents, including home visits, the communication of the application process and the program focus resulted in many cases, a lack of response. These factors may have potentially contributed to both the test and control group size.

The Discovery Program teacher selection was not tied to district seniority. Eightyfive percent of the instructional staff for the program was hired as first year teachers in the district. The remaining 15% were interviewed and selected by the principal. One hundred percent of the staff participated in professional development that was specifically designed to support constructivist instruction in both the *Discovery Program* and general curriculum classes. The teachers instructing the control group would have received their assignments based on their licensure and not their choice. These inconsistencies in both treatment and control groups of teacher selection and professional development should be recognized as factors that may affect the outcomes of this research. Both the control and treatment groups were involved with the Quaglia initiative that was focused on changing school culture and climate. The control group consisted of eight different buildings which were at different levels of implementing the initiative. The treatment group was led by a principal and staff that were chosen because they agreed to implement this initiative. Although both the test and control groups were involved with the school culture and climate change initiative, the level of implementation was not consistent.

The initial guiding belief that led to the creation of the Youngstown City School District intra-district *Discovery Program* was that when parents and students are given an

opportunity to choose a defined educational experience, student achievement will significantly increase. Although this research is focused on intra-district choice and the outcomes of the described belief, these factors may or may not have any impact on the outcomes of this program's activities.

#### **METHODS**

# **Participants**

The treatment group included all of the students in the district who attended grades two through seven in the 2012-2013 school year in the Youngstown City Schools that also attended the Discovery program during their 2013-2014 school year. The control group included all of the students in the same grades who did not apply, but remained in their home schools during the 2012/2013 and 2013/2014 school years. Only those students who remained in the district for both years, regardless of at what point in the two years they enrolled in the choice program, were included in this study. There are two years of student data used for both the treatment and control groups. The 2012-2013 data for both groups were generated while they were attending neighborhood/home schools before the choice program opened. The 2012-2013 data was used to determine the comparison baseline. An application showing interest, which included parents'/guardians' signatures demonstrating their understanding of the program and commitment to be a partner in their children's education was the only criterion for enrolling in the program. No auditions or interviews were required or conducted.

The total student population involved in the study was 2,041. The treatment group consisted of 230 students who attended *Discovery Program* for two consecutive years. The demographic make-up of this treatment group was 118 females, 112 males, 129 African-

American, 34 Hispanic, 8 multi-racial, 49 White, and 10 Asian students. Fifteen students, or less than 1%, were identified English Language Learners (ELL), and received English as a Second Language (ESL) support. Thirty-three students, or 14% of the treatment group, received services for a learning disability guided by an Individualized Educational Program (IEP).

The control group for this investigation consisted of 1,811 students who attended the same grades in the Youngstown City School District, but remained in their neighborhood/home schools. The demographic make-up of the control group was 866 females, 945 males, 1,159 African- American, 259 Hispanic, 112 multi-racial, 266 White, and 15 Asian. One hundred thirty students, or less than 1%, were identified ELLs, and received ESL support. All students (100%) in the Youngstown City School District are classified as economically disadvantaged.

#### Instrumentation

The Ohio Achievement Assessment (OAA) reading and writing data from the initial collection year determined the measurement baseline for grades three through seven, for both the treatment and control groups. Because the OAA is not given in the second grade, the reading and writing state diagnostic tests were used to determine the baseline for all second graders. The following year of OAA data for both the treatment group (*Discovery* choice) and control group (remaining in their neighborhood/home schools) in the two respective research environments was used for year two. The psychometric analysis for the May administration of the 2012-13 and 2013-14 Ohio Achievement Assessments report reliability estimates for these assessments that ranged from a low Cronbach's  $\alpha = .84$  to a high Cronbach's  $\alpha = .91$ .

### Procedures

The Ohio Achievement Assessment (OAA) reading, writing, and math data from the initial collection year determined the measured baseline data for grades three through eight, for both the treatment and control groups. The data for the research were collected from the Ohio Department of Education's Education Management Information System (EMIS).

#### RESULTS

A Difference-In-Difference (Dif) analysis was conducted within a general linear model analysis in SPSS 22. This analyses was used to assess whether differences existed from baseline to year one, and if any differences also existed across the two groups (*Discovery Program* students vs. *non-Discovery Program* students). All tests of statistical assumptions for these analyses were found to be tenable, based on the guidelines set forth in Tabachnik & Fidell (2007).

Prior to this analysis, pre- and post-intervention means for the treatment and control groups were examined across the dependent variables of Spring Testing Scores. For this assessment, only students who were present during the spring of 2012-2013 and spring of 2013-2014 were included in the analysis, irrespective of group membership. These values are presented in Table 1.

Table 1. Pre- and Post-Means for 2012-2013 to 2013-2014 Assessment Periods

	Control			Treat		
Spring Testing	Pre	Post	Δ	Pre	Post	$\Delta$
OAA Reading Scale	398.44	400.14	1.7	391.03	409.39	18.36
OAA Math Scaled Score	401.34	393.11	-8.23	395.24	407.73	12.49
OAA Science Scaled	393.42	382.61	-10.81	387.34	398.86	11.52

As seen in Table 1, the control group pre-intervention data are higher than the treatment



groups pre-intervention data across all three content areas. These outcomes are illustrated in Figure 1.

Figure 1. Pre- and Post-Means for 2012-2013 to 2013-2014 Assessment Periods

The Dif analysis reveals a significant interaction for group (treatment or control) by term

testing period (2012-2013 or 2013-2014). These results are presented in Table 2.

Table 2. Dif Analyses F-test Results

Source	Dependent Variable	F	Sig.
Term	Reading Scaled Scores	11.04	0.00
	Math Scaled Scores	0.44	0.51
	Science Scaled Scores	0.02	0.90
Group	Reading Scaled Scores	0.09	0.76
	Math Scaled Scores	1.77	0.18
	Science Scaled Scores	3.14	0.08
Term * Group	Reading Scaled Scores	7.63	0.01
	Math Scaled Scores	10.49	0.00
	Science Scaled Scores	15.12	0.00

Additionally, Dif analyses were conducted with all potential moderator variables. Retained

status and gender were not utilized as moderators in this analysis due to incomplete data, list-wise deletion processes, and lack of statistical significance. The moderator analyses provide aggregate changes in assessment scores by race and disability, across the two groups, in Table 3.

Table 3.	Change scores across	2012-2013 to 2013-2014 b	y Disability / Readin	g and Math
	0			

	Control Group		Treatment Group		
	Not Disabled	Disabled	Not Disabled	Disabled	
Reading	-5.69	-5.56	5.24	-2.57	
Math	2.40	2.89	12.73	5.91	

As seen Table 3, students identified as disabled revealed positive change scores in math for both treatment and control group members, however the magnitude of change was doubled by the treatment group members. Table 4 presents the aggregate changes across the different race categorizations.

Table 4.	Changes	in scores	across 2012-2013	to 2013-2014	by Race /	'Reading and	Math
	0				•	0	

Control Group				Treatment Group				
	Black	Hispanic	Mixed	White	Black	Hispanic	Mixed	White
Reading	-4.33	-6.26	-0.52	-2.99	0.06	2.24	-3.83	6.18
Math	3.51	4.82	2.08	6.61	8.16	4.62	10.01	15.56

As indicated in Table 4, change scores across all race groups are larger for the treatment group relative to their control group peers. The results of the Dif analysis are presented in Table 5.

Source	Dependent Variable	F	Sig.
Disability	OAA Reading Scaled Score	9.63	0.00
	OAA Math Scaled Score	10.08	0.00
	OAA Science Scaled Score	4.60	0.03
Race	OAA Reading Scaled Score	0.99	0.41
	OAA Math Scaled Score	1.41	0.23
	OAA Science Scaled Score	2.27	0.06
Term * Group * Disability	OAA Reading Scaled Score	0.01	0.94
	OAA Math Scaled Score	0.19	0.66
	OAA Science Scaled Score	0.83	0.36
Term * Group * Race	OAA Reading Scaled Score	0.88	0.45
	OAA Math Scaled Score	0.67	0.57
	OAA Science Scaled Score	0.01	1.00

Table 5. Tests of Between-Subjects' Effects

As evident in the moderator data presented in Table 5, no significant interaction effect was found. The main effect for reading (ND: 402.42, D: 393.35), math (ND: 396.65, D: 396.60), and science (ND: 388.51, D: 383.09), were found to be significant on the disability indicator. Additionally, the main effect for science across racial groups (B: 386.23, H: 388.61, M: 388.39, W: 390.67) was significant for the race moderator variable. However, this significant result is likely influenced by the extremely different sample sizes for each racial group and disability group; and, therefore, should be interpreted with caution.

#### **Grade Level Moderator**

Additional analyses examined if the results were moderated by the grade level of the students. Grade level was found to be a significant moderator for interactions, on both reading scores, F(4, 3575) = 11.50 = ,p < .001, and math scores, F(4, 3575) = 9.31 = , p < .001. Table 6 provides the specific average reading and math scores for students in each grade, by term and group membership.

Grade	Level	Group	Rea	Reading		ath
2013	2014		Pre	Post	Pre	Post
3	4	Control	400.69	406.08	399.65	396.61
		Treatment	421.67	416.61	426.87	415.54
4	5	Control	407.44	405.11	400.58	396.64
		Treatment	428.10	420.37	429.20	414.19
5	6	Control	398.78	402.85	401.10	392.63
		Treatment	391.03	411.00	395.24	409.96
6	7	Control	404.05	402.58	399.44	392.74
		Treatment	395.60	420.41	397.76	414.96
7	8	Control	400.52	401.60	394.91	394.47
		<u>Treatment</u>	383.35	424.50	382.50	415.06

Table 6. Reading and Math Scaled Scores by Grade by Term by Group

As indicated in Table 6, the change in scores across all grade groups are significantly larger for the treatment group relative to the control group beginning in grade 6, demonstrating that grade was a significant moderator for reading. A visual depiction is provided in Figure

2.



Figure 2. Reading Scaled Scores by Term by Grade by Group

As seen in Figure 2, the pattern of reading assessment scores significantly increases for the treatment group starting with grade 6. Figure 3 provides a visual depiction of the math scores indicated

in Table 6.



Figure 3. Math Scaled Scores by Term by Grade by Group

Similar to the reading scores, the treatment group shows gains beginning in the sixth grade.

#### Discussion

The general purpose of the current investigation was to examine effects on student achievement when intra-district choice programming options are available to parents and students. Traditionally, transformation efforts in this troubled inner-city districts appear to concentrate on the fidelity of the existing learning framework, instead of looking at how changing the framework to look and function differently inside the existing definition of public school might actually enhance improving student achievement. This investigation adds to the small body of research on inner-city school transformation examining school climate, inquiry project-based learning, 21st century learning skills, and parent/student choice. For the purpose of this investigation, choice refers only to program choice embedded within a district in the third through eighth grade; without restrictions not to be confused with other parental choices such as inter-district open enrollment, charter schools, cyber schools, and parochial options.

Previous research reported that most intra-district choice involves offering students an opportunity to enroll in one or more specialized schools (i.e., magnet schools) (Ryan and Heise, 2001). This body of research has investigated school choice that involves changes within the district's existing instructional framework. Few studies have examined the effects of intra-district choice programs on student achievement in inner-city public schools. And much of school choice research has been focused upon effects associated with charter schools, voucher programs, and inter-district choice.

The baseline data of the current investigation revealed that the control group preintervention scores were higher than the treatment group pre-intervention scores across all three content areas. This investigation measured student test scores revealing substantial gains from pre- to post-intervention for the treatment group relative to control group student scores during the same term. The *Discovery Program* had no academic entry requirement, therefore, any *Discovery Program* student overall performance gains should not be attributed to potential exiting of the higher achieving students from the control group to the treatment group. On the contrary, the control group pre-intervention data were higher than the treatment group pre-intervention data across all three content areas or dependent variables. This observation included third through eighth grade students in both groups, raising the question of whether or not the gains are distributed equally across all grades, or, are grade specific. It was found that the greatest gains were measured in grades

6 though 8.

The findings of this investigation used standardized test data obtained from State achievement assessments. This is unlike previous research, which found significant differences in overall achievement, but used different measures of student performance, including cumulative grade point average for middle school students in California (Gulek & Demirtas, 2005; Lei & Zhao, 2008), and homework and quiz grades for college students (Enriquez, 2010). The grades documented on student report cards often reflect effort and behavior in addition to student knowledge and may not be the most accurate measure of student achievement (Guskey, 2009). The findings of the current investigation are noteworthy in that the results look not only at the difference between the groups, like previous research, but also examine the impact within each research group. And, as indicated by the findings, the students in the treatment group, whose mean scores were initially below the students in the control group, demonstrated substantial gains and outscored students in the control group after one year of programming.

Notably, grade level was found to be a significant moderator for the interaction between group membership and time of measure on both reading and math scores. The pattern of grade level on the reading and math assessment scores was a significant moderator for the treatment group students in grades six, seven, and eight. The cut scale score demonstrating proficiency was 400 for all years of this investigation, which in the State of Ohio indicates proficiency.

A study conducted by Jonah Rockoff and Benjamin Lockwood (2010), *Stuck in the Middle,* found that entering a middle school causes a sharp drop in student achievement relative to the performance of those remaining in K–8 schools. In an extension of this 2010 study, entitled *The Middle School Plunge*, Martin West and Guido Schwerdt (2012),

confirmed that transitions into both middle schools and high schools cause drops in student achievement, but that these effects are far larger for students entering middle schools. Their research included a dataset from New York City that followed students from grade K through grade 8. Some of the students attended middle schools and some did not.

What they found supports a case for middle-school reform The study showed, that in the specific year when students move to a middle school (or to a junior high) academic achievement, as measured by standardized tests, fell substantially in both math and English relative to that of their counterparts who continued to attend a K–8 elementary school. This present study found results supporting their findings and provides promising evidence for addressing the decline in student achievement found in the middle school transition phenomena. The present study also revealed significant gains in grades 6 to 8 in the *Discovery Program* where there was no transition year moving from grade 5 to 6, which was the experience of the control group. The control group students transitioned to a middle school building after the 6<sup>th</sup> grade whereas the treatment students transitioned to a 3-8<sup>th</sup> grade building.

Boaler (2002) compared student mathematics achievement in two similar secondary schools, one using traditional instruction and the other using project-based instruction, similar to the *Discovery Program* framework. After three years, students in the project-based learning school significantly outperformed the traditional school students in mathematics skills, as well as conceptual and applied knowledge. Beyond academic outcomes, the Boaler study found that experience with projects reduced student math anxiety and resulted in more positive attitudes toward math. Boaler also found positive effects on equity. In Boaler's findings the link between performance and student socio-economic level also disappeared in the project-based school and increased in the traditional

school which was also found in this current study.

Other studies have also found that differentiated instruction supports the classroom as a community, accommodating differences and sameness (Bosch, 2001; Brimijoin, Marquissee, & Tomlinson, 2003; Lawrence-Brown, 2004; Tomlinson, 2003). It allows for the creation of an environment in which all students can succeed and derive benefit (Lawrence-Brown, 2004; Tomlinson, 2003). Differentiated instruction develops an atmosphere for success for all learners (Lawrence-Brown, 2004). Within these studies there is supporting evidence which provides an explanation to the gains made by the treatment disability subgroup in the current investigation. This research along with the middle school research also provides a potential explanation to the treatment group gains in grades 6 through 8 in the current investigation.

This is the first known study to utilize state achievement assessment scaled scores as the measure of overall student achievement when studying the impact of an intra-district choice plan with a defined instructional framework that includes conceptual learning, school climate, and 21<sup>st</sup> century learning skills. This study, although representing student data from one historically low performing, inner city school district, has implications that may affect how inner city school transformation efforts may be viewed in the future. The results of this inner city, intra-district investigation indicated significant measurable student reading and math achievement gains for the treatment group in comparison to the control group.

Results indicate that students with a disability in the intra-district program demonstrated gains higher than the control group disabled students. The findings of the current investigation provide some promising results for the potential successful graduation rates of the treatment group students. For example, as documented in the *At-Risk* 

*Conditions of United States School-Age Children* report from the 2001 U.S Census Bureau, there were seven contributing factors common to students not completing high school (Kominski, Jamieson, & Martinez, 2001): (a) at least one disability, (b) retained in grade at least once, (c) Speaks English less than 'very well,' (d) does not live with both parents, (e) either parent emigrated in past five years, (f) family income below \$10,000, or (g) neither parent/guardian employed. When race, gender, disability, and socio-economics were considered in the report, the seven contributing factors were more evident in all categories when geographically connected with inner city data. The same census report indicated that the largest population of failing students is found in diverse, inner city settings where there is a high population of economically disadvantaged African-Americans (Kominski, et al.).

The present investigation examined the independent variables of race, gender, and disability. Ninety three percent of Youngstown City School District students are identified as economically disadvantaged, and, therefore, there was not an identified economically disadvantaged subgroup within either the control or treatment groups. What this research demonstrates in the Youngstown City School District is that, when choice includes an instructional design with the underpinning of the *Discovery Program*, significant gains will be observed, regardless of traditional beliefs about barriers effecting inner city students.

There are a number of potential explanations for the gains observed for the sixth through eighth grade students in this investigation. Students in the *Discovery Program* were provided with a new approach to learning and discovery through the problem-based curriculum. Potentially, the impact that was revealed was due to a novelty effect. Both students and teachers in the *Discovery Program* were participating in a new school experience.

Students who were underperforming their control group peers were presented with

a technology- imbedded curriculum that was more engaging and provided them with choices. Recent research suggests that providing urban middle school students with choices regarding their learning (specifically in mathematics) is shown to increase and maintain the students' interest in their studies, increase a sense of value of the academic content, and help to develop a lasting personal interest in learning (Hogheim & Reber, 2015). Additional data is needed to understand the long-term impact of the *Discovery Program*, but these first year results suggest that discovery might be key to capturing the attention and interest of this i-generation of students.

A limitation to this investigation is the causal-comparative design. There are multiple variables that impact student learning and affect student performance on the state assessments. Therefore, one should use caution when drawing any conclusions regarding a single cause of any change in student achievement outcomes. However, unlike traditional causal-comparative research, the current investigation incorporates additional research design elements in order to rule out alternative explanations. Specifically, the current investigation used both pre- intervention data, as well as a control group for a differencein-difference design approach in order to approximate the impact of the intra-district choice programming.

Another limitation is the assurance of instructional and program fidelity for both the control and treatment groups. While both the control and treatment groups embrace the district's common curriculum, the *Discovery* intra-district choice program had three specific fundamental underpinnings of the learning environment: 21st century learning skills, technology supported curriculum, and the learning community relationships. Although, teachers in both the control and treatment groups received professional development in the district's common curriculum and ongoing instructional support, the

calibration of implementation fidelity did not occur, making it impossible to determine any direct potential relationship between the fidelity of instructional implementation and its impact on student achievement.

## Conclusion

Efforts to transform low achieving, inner city school districts have been at the forefront of the state debate, especially regarding the school district involved in the current investigation. Few studies have specifically looked at inner city, intra-district choice and the different frameworks that are associated with such choice. The question remains whether choice or programming are what produced the reported student achievement gains. Regardless, the results of the current investigation provide evidence in support of intra-district school choice programming. Additional research is forthcoming as the data becomes available.

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