

An Examination of the Impact of Intra-District School Choice Programming on Student
Achievement

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Douglas Hiscox

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An Examination of the Impact of Intra-District School Choice Programming on Student Achievement

Douglas Hiscox

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Signature:

Douglas T. Hiscox, Student

Date

Approvals:

Dr. Karen H. Larwin, Dissertation Chair

Date

Dr. Mary Lou DiPillo, Committee Member

Date

Dr. Charles L. Howell, Committee Member

Date

Dr. Salvatore A. Sanders, Committee Member

Date

Dr. Salvatore A. Sanders, Dean of Graduate Studies

Date

Abstract

This research explores the impact of an intra-district choice on student achievement in the Youngstown City School District as measured by student performance on the Ohio Achievement Assessment. The study sample includes a control group of students who remained in their neighborhood schools and a treatment group of students who chose the intra-district choice program. The treatment group followed the district curriculum, plus, a focus on 21st Century Learning Skills, embedded technology curriculum, and school climate. The Discovery program has been an intra-district choice since the 2012-2013 school year.

Overall student achievement in math, reading, and science are significantly affected by the introduction of intra-district choice based on pre- and post-test used to measure successful intervention. Initially, term and status were investigated. Independent moderators, including gender, grade, race, disability status, and retention status were considered. Correlation test found that only disability showed a significant effect in relationship with the dependent variables. There were also instances of the treatment group significantly outperforming the control group reading and math specifically in grades 6 through 8.

The data revealed a significant interaction between term and status for each of the three test areas. Treatment students produced the greatest overall change in scores (pre-treatment vs. treatment period). Students identified as disabled revealed positive change scores in math for both treatment and control group members. Intra-district choice students making up the treatment group, whose mean scores were below the students in

the control group, demonstrated substantial gains and out-scored students in the control group after one year of programming.

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Chapter 1

Statement of Problem

The discussions and actions acted out on the state and national stage pertaining to public education is an important part of American society and is a subject of interest to researchers (Burton & Bartlett, 2009). Additionally, there is a real need for school leaders to understand the basics of teaching and learning, and what factors within a school environment affect student outcomes. Research has demonstrated that there are many variables that contribute to a student's academic success, which include instructional strategies, classroom resources, school culture or current school climate, and the student's socioeconomic status (Brookover, Schweitzer, Schneider, Beady, Flood, & Wisenbaker, 1978).

At the end of the last four decades, the economic status of the city of Youngstown was ranked as the highest poverty community in the state of Ohio (Pizzuto & Davis, 2014). As a result of fewer employment opportunities, the city population has significantly dropped. The Youngstown City School District, which once served well over 20,000 students, now serves just over 5,000 students. In the last decade, the school district has been through two fiscal emergencies, leaving the district with a shell of the institution's support systems to both the general and academic operations of the district. After several consecutive years of not meeting the prescribed average yearly student progress found in the No Child Left Behind (NCLB) Act that was signed into federal law January 8, 2002, the Ohio Department of Education's (ODE) progressive action was to create an Academic Distress Commission under the guidelines of Ohio Revised Code 3302.01(ORC, 2005).

The Youngstown City School District, with oversight from the commission, faced 2010 with analyzing a very complex, but dysfunctional institutional structure, to determine a course of action that would result in higher levels of student performance. The challenge was to transform the Youngstown City School District by building new system capacity that strategically targeted best practice for all students. It was not practical to think of the district's transformation occurring with an approach that would resemble total abandonment of existing systems, but, instead, an aggressive remodeling approach.

Naturally, this suggested a challenging environment, as the district would need to systematically eliminate dysfunctional practices, add value to existing successful practices, and create the capacity to ensure fidelity of any new data-driven practices. As part of a poor-performing, inner-city school transformation, one aspect that would be examined is how students who remain in the district perform when given a choice to learn in a nontraditional program. There is a window of opportunity in the Youngstown City School District to examine the achievement impact of intra-district *Choice* programs instead of opting to leave for out of district options. As directed by the Academic Distress Commission in 2012, the district designed and introduced an intra-district choice opportunity that would be unique in and of itself by creating a learning environment for both students and staff that challenges them to explore and create knowledge.

Historical Context

The speed at which information is created and distributed has added greater challenges to the ever evolving question of how to prepare the next generation of citizens.

The 1983 *A Nation at Risk* report, as implied by the title, was President Ronald Reagan's appointed commission's charter response to the political observation that the United States' educational system was failing to meet the national need for a competitive workforce. As stated by a segment of the presidential commission's opening statement in the report, "...the educational foundation of our society is presently being eroded by a rising tide of mediocrity that threatens our very future as a Nation and a people" (*A Nation at Risk*, 1983).

The commission's final report covered what they believed to be deficiency findings in four areas in the nation's educational process: content, expectations, time, and teaching. The report provides detailed qualitative and quantitative evidence supporting their findings. While the national conversation about education would never be the same, few of the commission's recommendations have actually been enacted. Too often, state and local leaders have tried to enact reforms of the kind recommended in *A Nation at Risk* only to be stymied by organized special interests and political inertia. Without vigorous national leadership to improve education within the educational structure itself, states and local school systems simply have not been able to overcome the political obstacles when making the big changes necessary to significantly improve our nation's K-12 schools.

The lack of change in the nation's educational process, following decades of Presidential commissions on education, has been common since The Truman Report in 1947 (Hutcheson, 2007), and in other notable groups including President Eisenhower's 1956 Committee on Education Beyond the High School (Wooley & Gerhard, 2015), President Kennedy's 1960 Task Force on Education (Haefner, 1961), and President

George W. Bush's Commission on the Future of Higher Education (Atwell, 2006), also known as the Spellings Commission, which produced *A Test of Leadership*. On January 8, 2002, President Bush signed into law the No Child Left Behind (NCLB) Act, later reauthorized by the Obama administration. The NCLB Act emphasized greater accountability for schools, increased choice for parents of students in low-performing schools, and increased flexibility with the use of federal funds.

Under the provision of NCLB, all public schools receiving federal funding must annually administer a statewide standardized test to all students. If the school results are repeatedly poor, then steps are taken to improve the school. The federally-driven, state-action steps are intrusively progressive in nature with each consecutive year the school fails to meet the expected average yearly progress as defined within the body of NCLB. The Youngstown City School District is one such district that had not met the prescribed average yearly progress for five consecutive years (2005-2010). As a result of that, the district has experienced such prescribed corrective action.

Even with outside intervention over several years, only small amounts of improved student achievement have been measured on the standardized test measuring stick. This outcome raises a host of questions as to whether the intervention is appropriately targeted. This critical inquiry became the driving dialogue that guided the creation of the Youngstown City School District Discovery choice program.

The Youngstown City School District, in 2010, as a result of years of not meeting legislative prescribed achievement standards, was designated as a district in academic emergency. The Youngstown Academic Distress Commission (YADC) was established

by the State Superintendent of Public Instruction in January of 2010, pursuant to Section 3302.10 of the ORC. The statute requires that the State Superintendent of Public Instruction establish an Academic Distress Commission (ADC) for any school district that was declared in academic emergency pursuant to Section 3302.01 (Appendix C) of the ORC and failed to make adequate yearly progress for four or more consecutive years. The makeup, responsibilities, and authority of the commission are outlined in ORC 3302.10. The Youngstown Academic Distress Commission adopted the first Academic Recovery Plan June 28, 2010, with updates occurring on March 23, 2013, and, October 2, 2014. The plan speaks to 10 strategies which are intended to advance student achievement as reported on the ODE's district and school annual report card. Strategy II of the commission's plan is the overarching theme from which this body of research is focused. Strategy II as stated in the commission's plan states

Strategy II: To Increase Student Choice Grades K-9 and 10-12

Description: Create choice programs for grades K-9 and 10-12 that required only a student application. All student data from any such choice program will return to the home school and be part of the home school's report card data. Background: It is generally true that if parents and students choose their school, student performance is higher. Youngstown City School District has experienced this phenomenon with the Youngstown Early College High School. This is an established (11 years), choice school already in the district for students in grades 9-12.

Enrollment is restricted by enrollment parameters which include previous

academic performance. (Academic Distress Commission (ADC) - 2nd revision of the Academic Recovery Plan (ARP [Appendix D])).

The Youngstown City School District is a small, urban, public school district located in northeast Ohio. Although the district's school-age population in 2012 was just over 10,000 students, only about 5,400 students actually attended the Youngstown City School District. The other students attend institutions of choice, through programs such as open enrollment, EdChoice vouchers, and state chartered (community) schools.

In 2010, motivated by years of poor student achievement results, and a loss on the average of 500 students per year to open enrollment, charter schools, and other forms of school choice, the Youngstown City School District was committed to expanding the concept of choice within its own institutional structure. To begin, the district mirrored what other districts had done by creating schools within schools, such as magnet schools or thematic schools. In 2003 the Youngstown City School District established the Youngstown Early College (YEC), grades 9-12, and, in 2006, the Rayen Early College (REC), grades 6-8. At both Early College campuses, specific areas of the curriculum were compacted. At REC, compacting the science and math curriculum allow for freshmen to earn high school credit for Algebra I and Physical Science in the eighth grade year. At YEC, four years of high school credits can be earned in two years, so, in the last two years there is a concentrated effort on providing an actual college experience, potentially leading to an associate degree. With only these two program options, only 13% of the students really had a choice in programs. What was observed in the student achievement data was that the students in these two programs outperformed the 83% of the students who were not in a choice program.

During the first two years of these programs, the days of instructional loss because of discipline significantly dropped, and attendance improved. A possible explanation might be that the application criteria sorted out those students who would be most likely to succeed, or students were motivated to be successful because they had some say in their choice of program. The enrollment data also showed that some students who left the district for out-of-district school choice options were returning at a later date to enter the intra-district choice programs. Both schools continue to maintain academic qualifiers for entrance and pull from the student achievement data from each of the sending-schools. Both schools have experienced high student achievement and maintain a good standing on the Ohio Department of Education's school building report card. Year after year of high student achievement raised the question: When students have an opportunity to become engaged in work they have selected, are they more self-directed to reach higher levels of achievement?

In 2010 Chaney High School (9-12), redesigned into the Chaney Campus (6-12), housed two new programs. The redesign was the beginning of the expansion of choice beyond the two Early College schools. The value-added curriculum had a focus on STEM (science, technology, engineering, and mathematics) and VPA (visual and performing arts). Students had to apply and be selected. Participation in these programs was dependent upon either an interview for the STEM portion or an audition for VPA. Prior grades, discipline, and attendance were reviewed, but not used as the deciding factor for selection into the programs. Although the first district challenge was achieved by creating programs that seamlessly married the general curriculum with value-added studies, the district was not successful in sending the student data back to the home school. A problem occurred

with the threatened loss of School Improvement Grant (SIG) funds if the Chaney Campus did not maintain its state identification as a school instead of a facility housing program. This meant that student data from the Chaney Campus could not be sent back to the sending-school. Prior to the redesign, Chaney High School (9-12) was identified by the Ohio Department of Education (ODE) in academic watch. In 2011-2012, the first year of the redesign, 458 students elected to be in these two programs, an increased percentage of 21% of the students in the district selecting their program choice. Again, the district enrollment showed some students returning to the district to enter the intra-district choice programs. During the 2012-2013 school year, the enrollment in all of the choice programs increased by 158 students, increasing the overall percentage of choice students in the district to 25%. The student achievement performance in all of the choice programs continued to outpace the non-choice programs. Two years after the redesign, the new Chaney Campus (6-12) moved to an excellent rating on the state report card.

It should be noted that the students attending the Chaney Campus and the staff were not the same as when Chaney High School was rated lower. Another interesting outcome in the first implementation year was when the student data were retained as Chaney Campus data, the district, over all, experienced enough gains in student achievement data to advance one designation to academic watch status. This could be attributed to the implementation and monitoring of the district's new instructional framework and curriculum maps. Notably, the second year (2012) resulted in similar district gains, but not enough to advance the district's report card status.

Challenge

The district's mission was to create choice opportunities that would do more than create pockets of success in the district. As one aspect of the district's transformation, the expanded choice programs would need to raise the academic tide of the entire district if the Youngstown City School District was ever going to improve its standing among parents in hopes of stopping the exit of students.

The first challenge: in order to maintain the integrity and continued implementation of the district's general curriculum and instructional framework, the choice opportunities would have to marry the general education curriculum with value-added curriculum in a seamless and well connected, student learning experience. The second challenge: in order to avoid directing high student achievement data to pocket areas, the district would need to determine how to return student data back to the sending-school.

In the district's choice program, student achievement data from 2011 to 2012 were encouraging enough for the Academic Distress Commission to create Strategy II in the commission's academic recovery plan. The strategy called for expanding the program to provide more opportunities for students earlier in their school experience. The expansion was the creation of *Discovery* at the former Kirkmere Elementary building. The Kirkmere building was closed at the end of the 2012-2013 school year. The attendance boundary of the closed building was adjusted so students would be assigned to one of the remaining six neighborhood schools. It is important to point out the reason for referring to *Discovery* as a program. Students from any attendance area in the district could choose to apply to attend the program. Transportation was provided and the student data remained

with the sending-building. The only requirement for admittance was that parents complete an application. Previous academic performance was not used as criteria to determine admittance. In the first year, there were a limited number of seats. Applications were time-stamped and approved in the order they were received. A waiting list was not necessary since the number of applications did not exceed the number of available seats.

Purpose Statement

The current investigation will examine the impact of the Youngstown City School District's Discovery choice program on student achievement. The creation of the Discovery choice program could be viewed as an indirect result of presidential commissions' reported findings, government intervention strategies, and political agendas considered by practitioners in the field, and embedded, when appropriate, as part of a non-traditional, educational choice in an inner-city, public school district. This choice program was designed, implemented, and monitored by the practitioners responsible for the outcome. All of this was accomplished using the human capacity available within the district.

This study will compare the students' achievement on the grade 3-8 Ohio Achievement Assessment (OAA), before and after attending the Discovery choice program. The treatment group will be all of the students who have attended the Discovery choice program beginning in 2013-2014, the initial year of the program and 2014-15. The control group will be all of the students in the same grades that did not apply and remained in the home schools. The comparative data will include the years 2012-2013 through 2014-2015. Student scaled score performance for Reading, Math, and Science on the Ohio Achievement Assessment (OAA) will be the student performance the data set.

For the purpose of this study, the Academic Distress Commission's strategy, *Student Choice*, refers to choice within the district and is not to be confused with parental choices, such as open enrollment, charter schools, and parochial options; when a student is enrolled in such a program, that student's data are removed from the Ohio public school of residence.

Research Questions

The data collected for the purpose of this research represent students who have either decided to stay in their neighborhood school (control group) and follow the general education curriculum and instructional framework, or have chosen to attend a choice program at another school building (treatment group), which provides the same general education curriculum, but also exposes the students to an instructional framework that is intended to expand their exploration and discovery boundaries. The study will attempt to answer the following research questions about intra-district choice programs and student achievement:

1. What is the impact of the intra-district choice program on student achievement for students electing to participate in the program (treatment group) relative to students who do not participate in the program (control group)?
2. What is the change in student achievement for students in the treatment and control group, before and after the first year of the choice program?
3. Are there differences in program impacts for subgroups of students (grade, disability, race, gender, and retained status)?
4. What other student variables moderate the impact associations between choice programming and achievement?

Hypothesis

Since the NCLB Act, parents have had increased choices of where and how their children will receive their education. With the poor academic performance ratings of inner-city school districts, many have chosen to go elsewhere. As demonstrated in the existing, restricted choice programs of YEC, Rayen Early College Middle School, Chaney Campus (6-12) STEM, and the VPA programs, this study will examine the expansion of the Youngstown City School District's intra-district choice program. This study will determine if students participating in the intra-district choice option in grades three through eight Discovery at Kirkmere program out perform their counterparts that chose to remain in their neighborhood schools. It is hypothesized that the Discovery intra-district choice program will demonstrate in all subgroups, a significant increase in student achievement.

Context of Study

The student achievement data remained building or program specific in order to determine if the Academic Distress Commission's overarching purpose to advance the overall district's academic achievement would be achieved by increasing choice options. In order to find out if the selection of the Discovery program had enough impact on advancing participants' achievement, and, therefore, improving the district's overall student achievement, the students' data were reflected in the sending-school data. This practice has not been followed in previous choice programs such as Youngstown Early College, Rayen Early College, and Chaney Campus VPA and STEM and, therefore, any realized gains were not reflected on the district's state report card.

In the spring of 2013, applications were accepted for the new, Discovery choice program at Kirkmere. The program application was open to all district students, special education, gifted, and all other student subgroup classifications in third grade through eighth grade. The Discovery choice program was designed to give students an opportunity to discover their interests in six, value-added learning experiences. They included the academic areas of scientific inquiry, foreign language, speech and communication, engineering, and dance and music (choir, strings, and band). Because there were no grants tied specifically to Discovery at Kirkmere, it was designated as a program which allowed the student data to be reflected in the sending-school data. The challenge of marrying the general curriculum and instructional framework with value-added learning experiences, plus maintaining the district effort to raise the entire district's student achievement through choice programs were met in the design of the Discovery program. One of the three foundation components of the Discovery choice experience is the embedded Discovery Technology Lab.

Discovery Technology Lab

The Discovery Technology Lab supports all of the classroom activities. The lab is supported by INVENTORcloud technology (Scott, 2012). The INVENTORcloud program is a comprehensive program that offers inquiry and problem-based learning in a unique, technology rich environment. It utilizes hardware technology and software applications to integrate innovation, creativity, and design thinking with other 21st century skills, such as communication, collaboration, and critical thinking. Rich, relevant subject matter, combined with these skills, is then applied to project-based activities.

Developed by Applied Systems and Technology Transfer (AST2), the INVENTORcloud Program is positioned at the center of the district's instructional framework (Appendix E).

All INVENTORcloud courses challenge students individually and as teams to collaborate, design, invent, create, and solve real-world challenges. Students apply the design process using computer design and visualization tools to create virtual prototypes, which are then produced with 3D printing, rapid prototype, and digital manufacturing equipment that is accessed virtually from anywhere, but presently located at the Kirkmere building.

INVENTORcloud curriculum consists of digital courses for a digital classroom enabled through AST2's Team Up software. Content is derived from relevant videos, articles, and subject matter experts. The rich, dynamic content creates thought provoking and interesting courses for a broad range of students. The primary focus and objective of the INVENTORcloud Program is to impart analytical thinking and problem-solving skills, combined with curiosity, as a fundamental life skill.

QISA - Quaglia Institute for Student Aspiration

The Discovery choice program also focused on closing the *expectation*, *relationship*, and *participation* gap for every student (Quaglia & Corso, 2014). The MyVoice survey was given to every student and teacher in the district as the data used by the district to work on student voice and aspirations. The MyVoice survey is an instrument that was developed by the Quaglia Institute for Student Aspiration (Quaglia & Corso). The following are questions from two of the six survey areas. Sense of accomplishment, fun and excitement, curiosity and creativity, and spirit of adventure are the other four areas.

Belonging

School is a welcoming and friendly place.

I feel accepted for who I am at school.

Teachers make efforts to get to know me.

I have difficulty fitting in at school.

Teachers care about my problems and feelings.

I am proud of my school.

I am a valued member of my school community.

I think bullying is a problem in my school.

Heroes

Students respect teachers.

My parents care about my education.

I have a teacher who is a positive role model for me.

Teachers care about me as an individual.

Teachers care if I am absent from school.

If I have a problem, I have a teacher with whom I can talk.

Teachers respect students.

Students respect each other.

During the first year and moving forward, Discovery has been, and will be engaged in using the program's data to build activities that begin to address all three gaps.

Discovery Classes

When proposing solutions about how schools can and must change, the literature is focused on what students and teachers need to do differently (Wagner, 2008). For example, students need to learn new skills; they need to be critical thinkers with large amounts of information available through technology tools (Wagner, 2008). A constructivist framework is found in the Discovery instructional pedagogy.

Constructivist teaching is based on the belief that learning occurs as learners are actively involved in a process of meaning and knowledge construction rather than passively receiving information. 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). The learners are the makers of meaning and knowledge.

Constructivist teaching fosters critical thinking and creates motivated and independent learners. The Discovery classrooms are structured so that learners are immersed in experiences within which they may engage in meaning-making inquiry, action, imagination, invention, interaction, hypothesizing, and personal reflection.

Collaboration has powerful effects on student learning. These effects are seen in the form of higher scores on work completed collaboratively, even when students turn in separate products (Fall, Webb, & Chudowsky, 1997; Rojas-Drummond & Mercer, 2003; Webb, 1993). In addition, the evidence suggests the learning that occurs during collaboration persists (Webb, 1993). In other words, after collaborating with others, a

student's performance on related tasks, though completed individually, tends to be higher than the performance of similar ability students who only work alone. Studies show that engaging in collaborative learning opportunities with classmates can have a lasting impact on individual student learning. Collaborating can also increase students' social competency (e.g., conflict resolution skills and use of helping behaviors) and academic self-concept (Ginsburg-Block, Rohrbeck, & Fantuzzo, 2006).

One of the fundamental components of the Discovery choice program is an experience for all students from third to eighth grade to collaborate in six discovery topics: engineering, science inquiry, communications, foreign language, the arts, and personal health/physiology. Teachers in all six of the discovery areas have worked with the general education teachers to integrate value-added activities in the core district curriculum. An example can be found in Appendix A.

Significance of the Study

This investigation will demonstrate whether the Discovery choice program, as prescribed by the Youngstown City School District Academic Distress Commission, is making positive, predictable changes in student achievement outcomes to sufficiently raise the district out of its academic watch status. With the number of inner-city school districts that have faced a similar identification over past decades, this seems to be a question that should have significant value in the context of inner-city school transformation. The body of research investigating inter-district school choice is growing, but there does not appear to be a focus of research pertaining to intra-district choice. Transformation efforts in troubled inner-city districts appear to concentrate on the fidelity of the existing framework, instead of looking at how changing the framework to look and

function differently inside the existing definition of public school might actually push the needle of improving student achievement. This study will add to the inner-city school transformation body of research pertaining to school climate, inquiry project based learning, 21st learning skills, and parent/student choice.

Definitions

Cyber school - Describes an institution that teaches courses entirely, or, primarily through online methods.

Constructivist teaching - Constructivist teaching focuses on learners being immersed in experiences within which they may engage in meaning-making inquiry, action, imagination, invention, interaction, hypothesizing, and personal reflection (Gray, A. (1995).

EdChoice vouchers - The Educational Choice Scholarship (EdChoice) Program was created to provide students from underperforming public schools the opportunity to attend participating private schools (OAC 3301-11-01).

Instructional technology - Instructional technology aims to promote the application of validated, practical, procedures in the design and delivery of instruction.

Inter-district choice - In the context of this study, inter-district choice is in reference to the ability of a parent and/or student to select an instructional option outside of the resident district, such as open enrollment, charter schools, and parochial options (OAC 3301-48-02).

Intra-district choice - In the context of this study, intra-district choice is in reference to the ability of a parent and/or student to select a

defined instructional program embedded within the Youngstown City School District (OAC 3301-48-02).

MyVoice Survey - The MyVoice Student Survey, developed by the Quaglia Institute for Student Aspiration, is utilized by teams of educators and students working together to develop shared objectives and inspire meaningful improvements within their schools.

Ohio Achievement Assessments (OAA) - Assessment instruments for grades three through eight in reading, mathematics, science, social studies, and writing that are aligned to Ohio's learning standards (ODE, 2006).

Ohio Graduation Tests (OGT) - Assessment instruments for all tenth grade students in language arts, writing, mathematics, science, and social studies. The assessments are aligned to Ohio's learning standards and graduation requirements (ODE, 2006).

Open enrollment - Open enrollment allows a student to attend school tuition-free in a district other than the district where his or her parents reside (OAC 3301-48-01).

State chartered (non-public community) schools - Chartered nonpublic schools are private schools that hold a valid charter issued by the state board of education and maintain compliance with the Operating Standards for Ohio's Schools. These schools are not supported by local or state tax dollars and require the family to pay tuition. Chartered non-public schools are eligible for the Administrative Cost Reimbursement Program, Auxiliary Services

Program, transportation services for students, and Edchoice vouchers (ORC 3314.01, 2003).

Chapter 2

Literature Review

This investigation will examine the impact of the Youngstown City School District's Discovery choice program on student achievement. The research will compare scores on the Ohio Achievement Assessments (OAA) of those students who attend the Discovery choice program with students of the same grade cohort, who stayed in their home school.

The literature review will look at school improvement research, as well as the history, types, and impact of choice options. A distinction will be made between inter-district and intra-district choice, with an emphasis on parent/student choice within their home district. This research is specifically focused on the students' achievement for those students who did or did not attend the Youngstown City School District's Discovery choice program. To understand the difference in the learning environments of the home schools versus the Discovery program, as part of the literature review, the three foundational components of the Discovery program will be reviewed. These three foundational blocks distinguish the traditional Youngstown's home school from the district's Discovery choice program.

Effective Schools Movement

The Effective Schools' Movement created a body of research that supported the premise that all children can learn and that the school controls enough of the factors necessary to assure student mastery of the core curriculum. The effective school research concluded what existed were common characteristics among identified effective schools (Brookover & Lezotte, 1977). Characteristics or correlates of effective schools were later

identified in a 1982 paper that was presented at the National Invitational conference, Research and Teaching (Edmundson, 1982). In his paper, Edmundson made reference that all effective schools had the following:

- the leadership of the principal, notable for substantial attention to the quality of instruction;
- a pervasive and broadly understood instructional focus;
- an orderly, safe climate conducive to teaching and learning;
- teacher behaviors that convey the expectation that all students are expected to obtain at least minimum mastery; and
- the use of measures of pupil achievement as the basis for program evaluation.

Over the years, the correlates have been refined and expanded to the following:

- Instructional Leadership;
- Clear and Focused Mission;
- Safe and Orderly Environment;
- Climate of High Expectations;
- Frequent Monitoring of Student Progress;
- Positive Home-School Relations; and
- Opportunity to Learn and Student Time on Task

All of the seven correlates were emphasized in the design of the Youngstown City School Discovery choice program.

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 within the definition of district 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 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). The most common form of school choice is the selection of a residential address based on the school that children, at that address, would attend.

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. Hoxby (2002) 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 increase 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, 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 drawn to assist in guiding program replication. Also, the central issue of parent displeasure is the motivation for creating inter-district choice programs; accepting the conclusions drawn from those studies as having a strong correlation to the effects of intra-district choice programs would be misleading (Abdulkadiroglu, 2003) since the students did not leave the district. School choice research on the introduction of 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. 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. Since the authorization of NCLB, studies of school choice, such as this one, have now

been aided by the state assessment strategy which requires testing in third through eighth grade.

Studies of intra-district choices are now beginning to emerge. 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 schools, but were able to attend schools other than their neighborhood school on a space-available condition. Cullen (2005) recently studied open enrollment among high school students in Chicago Public Schools. The open enrollment system he 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 his 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.

A productivity question exists that relates to the extent that school choice is associated with increased academic achievement for students opting into or out of assigned or home schools. 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 be helped. 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.

The purpose of this study is not to explore or explain the large differences in performance among diverse forms of school choice. Instead, it is aimed at providing an analysis to whether 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.

When studying the student academic performance in the Youngstown City School District's intra-district choice program, it is important to review the literature surrounding the three specific fundamental underpinnings of the Discovery intra-district learning environment: 21st Century Learning Skills, technology supported curriculum, and the learning community relationships.

Tulsa Public School Choice - Intra-District

Beginning in 1982, 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). 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; Rofes, 1998). These studies suggested 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 literature assumes 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). That was not the experiences of administrators in Tulsa. 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.

This was the impetus behind the Discovery program being an intra-district choice program that was 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 reason, which is unique to what the Tulsa Public School research was able to capture due to the intra-district Tulsa Public School policy.

Catholic School Choice

Scholars debate the reasons for Catholic schools' success. Skeptics point to selection bias—that is, the possibility that Catholic schools attract better students with more highly motivated parents than public schools. But, as Charles Payne (2008) recently observed, there is ample evidence that the achievement differential between public and Catholic schools is not attributable to selection bias. A better explanation is suggested by the work of Anthony Bryk, Valerie Lee, and Peter Holland (1995) and his colleagues, who argued that Catholic schools succeed because they are intentional communities with high levels of trust, social capital, and high expectations for achievement for all community members, regardless of race or class.

Scholarly opinion about charter schools' performance as educational institutions is mixed. Some studies suggest that traditional public schools outperform charter schools, (Center For Research On Educational Outcomes, 2009), while others find that charter schools' records surpass that of public schools, at least after accounting for selection bias (Betts & Tang, 2008). Charter school performance varies significantly across states. For example, the available evidence suggests that students attending charter schools in Chicago outperform their public school counterparts on a range of measures, and, the students in charter schools in Washington, DC, do not (Hoxby & Rockoff, 2004). There are clearly some very good charter schools, and some charter schools are rightly celebrated for their remarkable success in educating students who fall behind in public schools—and many of them employ educational strategies that closely approximate the Catholic school formula, including a highly structured school day, traditional curriculum, high levels of parental involvement, and an emphasis on building an educational community between the various school stakeholders.

Constructivist Pedagogy -21st Century Learning Skills

The Discovery pedagogy introduced a constructivist approach toward learning. An illustration of this was made by Rosenblatt (1978) who argued how a personal and constructive response to literature, whereby students' own experiences and perceptions are brought to the reading task, so that the realities and interpretations which the students construct are their own. In a constructivist classroom, the teacher and the student share responsibility and decision-making, and demonstrate mutual respect.

The Discovery constructivist, student-centered approach places more focus on students' learning than on teachers' teaching. A traditional perspective focuses more on

teaching. From a constructivist view, knowing occurs by a process of construction by the knower. Lindfors (1984) advised that how we teach should originate from how students learn. 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.

Educators have long recognized the importance of developing critical thinking skills. There is a belief that more must be done to ensure that students are acquiring the knowledge and skills they need to be successful in whatever professional path they choose. Over the last several decades, the research has shown that the industrial economy, based on manufacturing, has shifted to a service economy driven by information, knowledge, and innovation. The skills needed to support such a workforce are described within the context of 21st century skills (Autor, Levy, & Murnane, 2003). This is the first foundational block embedded in the Discovery choice program. It goes beyond the basics of reading, writing, and math. Surveyed employers continually emphasize that, in our 21st century economy, students need to be adept at critical thinking and problem-solving, communication, collaboration, and, creativity and innovation, in addition to being proficient in core subjects (Trilling & Fadel, 2009). In 1967, the production of material goods and delivery of material services accounted for nearly 54% of the country's economic output. By 1997, the production of information

products and the provision of information services accounted for 63% of the country's output. Information services grew from 36% to 56% of the economy during that 30-year period (Karmarkar & Apte, 2007; Apte, Karmarkar, & Nath, 2008).

A study by the Massachusetts Institute of Technology (Autor, Levy, & Murnane, 2003) found that, beginning in the 1970s, labor input of routine cognitive and manual tasks in the U.S. economy declined and labor input of non-routine analytic and interactive tasks rose. Also, a study done at the Educational Testing Service (Carnevale & Derochers, 2002) found a significant increase in the number of workers who have at least some level of higher education. Advanced economies, innovative industries, and high-growth jobs require more educated workers with the ability to respond flexibly to complex problems, communicate effectively, manage information, work in teams, and produce new knowledge. Activities targeted at improving creative thinking have been successful at increasing student academic achievement (Maker, 2004). Similarly, studies have shown that measures of creative thinking significantly predict first-year college students' grade point averages (GPAs) above and beyond high school GPA and SAT scores (Sternberg, 2006).

On May 3, 2012, Representative Thomas Petri (R-WI) introduced the 21st Century Readiness Act (U.S. 112th Congress, 2011-12, H.R. 2536). H.R. 2536 did not create any new programs or authorize additional spending; instead, it amended the Elementary and Secondary Education Act (ESEA) to emphasize the importance of 21st century skills, and gave states and districts added flexibility to develop and enhance these skills as part of their own initiatives. As a result of this legislation, a growing coalition of states and school districts recognized the importance of giving students the tools they

need to succeed in our 21st century workforce. The Discovery at Kirkmere choice program embraces the intent of this legislation. The 21st Century Learning Skills 4Cs' (critical thinking, communication, collaboration, and creativity) outcomes that were introduced in the Discovery choice 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 (Partnership for 21st Century Skills, 2006).

Embedded Technology Supported Curriculum

A great deal of money has been spent by school districts to bring digital technologies to classrooms, yet the calls for technology to transform education continue. Technology can be used to support many high-level education goals: increasing student learning, making school engaging and relevant, providing equitable access for disadvantaged populations, communicating between school and community to support students, supporting teachers' professional growth, holding schools accountable for student outcomes (Zhao, 2002), and the list continues to develop with each new technological advancement.

A nationwide survey of teachers and superintendents commissioned by Jostens Learning Corporation (Earle, 1997) indicated that the computer revolution has had a tremendous impact in the classroom. However, the emphasis was on student access to information outside the classroom, and not on specific academic achievement or creation of knowledge (Bosch, 1993; Niess, 1991; Trotter, 1997). Fewer than half of the teachers in this study had previously used computers for instructional purposes. A variety of other surveys supported the emphasis on student access to information, which was also

true of the Discovery staff. They indicated a lack of integrated use of technology to discover knowledge within the curriculum. Equipping teachers with the skills to embed technology in the instructional framework in a way that supported students in discovering knowledge was not done with any concentrated effort until the creation of the district's Discovery choice programs. Students need help to focus their attention as they participate in technology-delivered learning activities and interact with visualizations and simulations (Gobert & Pallant, 2004). These types of learning activities are supported by the embedded technology that exists in the foundation of the Discovery choice program.

Embedding the use of technology as a tool for exploring a range of learning opportunities is the second fundamental component of the Youngstown City School District intra-district choice 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 knowledge of how technologies can support students' learning of subject area content is known as Technological Pedagogical Content Knowledge (TPACK). TPACK has been introduced as a conceptual framework for the knowledge base teachers need to effectively teach with technology (Mishra & Koehler, 2006). The framework stems from the thought that technology integration in a specific, educational context benefits from a careful alignment of content, pedagogy, and the value-added with using technology (Graham, 2011). Teachers who want to integrate technology in their teaching practice, therefore, need to be competent in all three domains. The definition of TPACK suggests that this specialized knowledge needs to be developed in a context that focuses on the

student, classroom, and content to be taught. These teachers are confronting an innovation that integrates a new technology tool, new teaching and learning strategies, and a revision of how they know their subject matter content as a result of the availability of the new technology (Niess, 2008). The added value of TPACK is how technology can support students in learning to discover knowledge of a particular subject (Cox & Graham 2009; Niess 2011).

The Discovery Technology Lab uses INVENTORcloud technology 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 INVENTORcloud 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) 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.

School Climate

There is a significant amount of research that suggests school climate, the third component, 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). President Bush's goals (i.e., more choices for parents and students, intervention to help students who are at risk for academic failure and dropout) align with involving parents and students in the educational process. Research continues to show that children whose parents are involved in their education obtain higher grades in math and reading (Epstein, 2001; Galloway & Sheridan, 1994), become involved in school activities, and complete more homework. It is well established that parental involvement is correlated with school achievement (Long, 2007). Elementary school children gain greater academic, language, and social skills (Grolnick & Slowiaczek, 1994), middle and high school students have greater achievement and future aspirations (Eccles & Harold, 1993) and spend more time doing and completing homework (Epstein & Sanders, 2002). Research shows that parental involvement is more important to children's academic success than their family's socioeconomic status, race, ethnicity, or educational background (Amatea & West, 2007). Parents tend to be involved with their children's education as a consequence of choice.

African-American parents also have a hard time involving themselves with their children's schooling (Koonce & Harper, 2005). Unlike the language barrier of Arab parents, some African-American parents find it difficult to trust their children's schools. Horrible childhood experiences of their own, continuous low expectations for students from teachers, and feelings of helplessness have led some African-American parents not to trust their children's schools (Brandon, 2007). Furthermore, African-American parents complain that they do not feel welcome at their children's school (Dauber & Epstein, 1993). Nevertheless, involving African-American parents in their children's schools is an

important factor for academic progress. Research suggests that when African-American parents are academically involved in their children's schooling, behavioral problems decrease and academic achievement increases (Hill & Taylor, 2004).

Cultural and language differences hinder Hispanic parental involvement at schools; parents who do not speak English in their homes are least likely to participate in activities at their children's schools. Inger (1992) argued that successful involvement of Hispanic parents begins with understanding their culture and values. Failure to understand Hispanic parents' values and culture may lead to negative outcomes for schools and students. For instance, Hispanic parents prefer face-to-face communication versus handwritten notes sent home by teachers. Additionally, American teachers traditionally prefer a structured parent conference, whereas Hispanic parents prefer a more relaxed conference setting. Failure to recognize simple cultural values could hinder the academic success of the Hispanic child and the involvement of the Hispanic parent (Inger, 1992).

The third fundamental component of the Youngstown City School District's intra-district Choice program deals with creating the necessary relationship that supports a learning environment that embraces discovering knowledge for all students. Reality 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 (Guaglia & 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). Anyone who works in schools knows that students have a great capacity to live up to, or let down, the influencing adult's expectations.

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. The MyVoice survey (Quaglia & Fox, 2003) adds insight here. The Quaglia Institute's decade of data collection across the county and in all types of demographics showed that, although 91% of students surveyed agreed with the statement, "I believe I can be successful," only 70% agreed that, "Teachers think I can be successful." In other words, slightly more than one-fourth of students did not think their teachers expected them to succeed in school (Quaglia & Corso, 2014).

Studies have shown students are acutely aware of the view teachers hold of them, and that awareness affects their actions. It's challenging to push students to take advanced courses, or even attend classes, when they suspect teachers expect them to fail. For example, a recent study of 262 Black, middle school students concluded that these students' reports of their teachers' expectations were significant predictors of their cognitive, emotional, and behavioral engagement in school (Tyler & Boelter, 2008). Comparing students' responses on the MyVoice survey shed further light. The same Quaglia Institute's decade of data collected across the country quantifies this point. Students who agreed with the statement, "Teachers believe I can be successful" reported remarkably different school attitudes than did students who disagreed with this statement.

Seventy-five percent of students who believed teachers expected them to succeed also agreed that tests were an important part of their education. Correspondingly, many students who felt that teachers did not believe they could be successful also did not believe tests were important. Because tests are one measure of student achievement, communicating the importance of assessments to all learners is an essential protocol of the Discovery choice program. This practice addresses closing this expectation gap. Consider students' responses to the statement, "Getting good grades is important to me." Of the students who agreed that, "Teachers believe I can be successful," 87 % also agreed that getting good grades is important. In stark contrast, only 52 % of students who did not think teachers expected them to succeed said getting good grades was important (Quaglia & Fox, 2003).

Students' beliefs about the importance of their grades affect their achievement. According to researchers at the University of Chicago, what counts most in predicting whether an individual student will finish high school are grades and attendance (Allensworth & Easton, 2007). More than 95 % of students with a B average or higher in their freshman year of high school eventually graduate (Allensworth & Easton, 2007). This demonstrates that teacher expectations affect more than just the classes students choose. Expectations may well affect students' beliefs in the importance of day-to-day academic requirements like studying for tests or striving for good grades.

The relationship gap is the second area of school climate the Discovery choice program is addressing. 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). Further review of the Quaglia Institute's data shows, when comparing responses of students who agreed with the statement, "I put forth my best effort at school" with those who did not, had dramatically different perspectives on student-teacher relationships. Students who said they put forth their best effort were twice as likely to agree with the statement, "Teachers care about me as an individual" (Quaglia & Fox 2003).

The participation gap is the third area of school climate to be referenced. 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 choice program.

Summary

When legislative actions created avenues of choice options for families who live in a defined, under-performing district or school building, a large numbers of families in the Youngstown City School District opted to select choice options out of the district. The parents who selected to stay in district are also looking for the best educational experience for their children. The purpose of this research is to provide answers to whether a specific, intra-district choice program in a struggling, inner-city school district is likely to result in higher levels of student achievement as predicted in the inter-district choice research.

The literature review of inter-district school choice research indicates the introduction of school competition predicts an increase in student achievement on state tests. What the research fails to answer is, what happens with student achievement when parents who do not want to leave their home district exercise an option of unrestricted intra-district choice? The current investigation proposes to fill the existing gap in the research literature and, specifically, investigate the existing intra-district choice program's impact. The literature review includes a look at the research behind the three fundamental components of the Youngstown City School District's choice program. Within the research definition of 21st century skills, it is obvious that this component goes beyond the basics of reading, writing, and math to include critical thinking and problem-solving, communication, collaboration, creativity, and innovation. As concluded from surveys discovered in the review, the core areas of 21st Century Skills are necessary components to ensure a productive workforce. Studies by the Massachusetts Institution of Technology (Fisher, 2013) and Educational Testing Service (Burrus, Betancourt,

Holtzman, Minsky, MacCann, & Roberts, 2012) concluded that activities targeted at improving creative thinking have been successful in increasing student achievement.

The research behind a second component of technology-supported curriculum indicates that the computer revolution has had a tremendous impact in the classroom. It also shows the emphasis has been on student access to information outside the classroom and not on specific academic achievement or in the construction of knowledge.

The research behind the third component of school climate supports that it is a major contributing factor in student outcomes and a school's overall performance. The research also demonstrates higher levels of student achievement occur when parents are involved in their children's education.

Potential Limitations

This research has several potential limiting factors that need clarification and consideration. The Discovery program selection process required that an application be completed by the parent, and 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 meant having siblings attending multiple locations. This may have led to disruptions with after school child care accommodations that were too challenging for some parents to overcome. Many families have limited access to transportation which cripples their ability to be involved with their children and the program. These two factors may have influenced the decision 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 encountered, in many cases, a lack of response. These factors may have potentially contributed to both the test and control group size.

With the signing of the parent contract (Appendix B) there was an expectation that parents would be active in some way with their child's education while at discovery. Distinguishing between the level of parental/family involvement in both the treatment and control groups was not measured beyond the signing of the contract. Not knowing the exact level of involvement could be a positive or negative factor impacting the findings.

The administration was selected through an interviewing process. The discovery program teacher selection was not tied to district seniority. Eighty-five percent of the instructional staff 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 and general curriculum classes. The teachers instructing the control group may have received their assignments based on their licensure and not their choice. The inconsistency 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 test group was led by a principal and staff that were chosen because they agreed to

fully 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 were given an opportunity to choose a defined educational experience, student achievement would significantly increase. Although this research is focused on intra-district choice and the outcomes of the described belief, the identified potential limiting factors may or may not have an impact on the found conclusions.

Chapter 3

Methodology

Research Purpose

This current investigation will examine the impact of the Youngstown City School District's Discovery choice program on student achievement. This chapter will provide information regarding the participants, instrumentation, procedures, and proposed analysis of this investigation. For the purpose of this study, the Academic Distress Commission's strategy, Student Choice, refers to choice within the district. The comparative data will include the years 2012-2013 through 2014-2015. Primarily, student achievement will be the dependent variable of interest. Secondly, attendance and frequency of discipline incidences will be outcome measures of interest.

Research Questions

The current investigation will address the following research questions:

1. What is the impact of the intra-district choice program on student achievement for students electing to participate in the program (treatment group) relative to students who do not participate in the program (control group)?
2. What is the change in student achievement for students in the treatment and control group, before and after the first year of the choice program?
3. Are there differences in program impacts for subgroups of students (grade, disability, race, gender, and retained status)?
4. What other student variables moderate the impact associations between choice programming and achievement (including, but not limited to student progressive OAA performance data)?

The current investigation is a causal-comparative investigation intended to examine the impact of the intra-district choice program during the 2013 to 2014 school years. The data for this investigation are pre-existing information that is readily collected by all public school districts in the State of Ohio. The comparison that will occur will be between student data for those students who have elected to participate in the choice program (treatment group) relative to those students who have not participated in the choice program (control group). The comparative data will include the 2012-2013 and 2013-2014 school years. As such, data will be examined for any pre- to post-intervention changes across the control and treatment groups. Potential moderator variables of building leadership, teacher qualifications, parent support resources, and student and teacher attendance will also be evaluated for their potential impact on student outcomes.

Participants

The treatment group will include all of the students in the district who attended grades three through eight in the 2013-2014 school year, and grades three through eight in the 2014-2015 school year. The control group will include all of the students in the same grades who did not apply, but remained for the choice program in the home schools in 2013 to 2014. Only students who have been in the district for both years, regardless of what point in the two years they enrolled in the choice program, will be included in this study. There will be 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 schools before the choice program opened. The 2012-2013 data will be used to determine the comparison baseline. The program was a choice option for all students in the district, including all subgroup classification (special education, English

language learners, economically disadvantaged, African-American, White, multi-racial, Asian, and Hispanic) in grades three through eight. 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 (Appendix B), 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 Kirkmere Discovery Choice for two consecutive years. The demographic make-up of this treatment group was 118 females, 112 males, 129 African-American, 34 Hispanic, eight multi-racial, 49 White, and 10 Asian. 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 treatment group consisted of students from the following neighborhood schools.

Table 1. *Treatment Group Geographic Data*

School	# of Students	% of Treatment Group
Bunn	29	13%
MLK	41	18%
Taft	43	19%
Harding	33	14%
Williamson	40	17%
McGuffey	44	19%
East MS	29	13%

The treatment group administration was selected through an interviewing process.

The discovery program teacher selection was not tied to district seniority. Eighty-five percent of the instructional staff 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 and general curriculum classes. The teachers instructing the control group may have received their assignments based on their licensure and not their choice.

The control group consisted of 1,811 students who attended the same grades in the Youngstown City School District, but remained in their neighborhood school. 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. Table 2 identifies the demographic data for the research treatment and control group participants.

Table 2. *Demographic Data per Racial Group*

	Treatment	Control
Male Participants	48%	52%
African-American	56%	64%
Hispanic	14%	14%
White	21%	15%
Multi-racial	3%	6%
Asian	5%	1%

The Youngstown City School District student demographics are not representative of

the school age population in Mahoning County. There are 84 public schools in Mahoning County serving 34,095 students. Comparably, the African-American and multi-racial student population in Mahoning County is 32% compared to 59% in the Youngstown City School District, which is also more than the Ohio state average of 27%. As a point of reference, economically disadvantaged students' median household income in Youngstown is \$24,880, compared to Mahoning County at \$38,533, and the State at \$46,302. The Youngstown City School District School population is comparable to the Ohio 8, which include Canton, Columbus, Cleveland, Toledo, Dayton, Cincinnati, Youngstown, and Akron. In the Ohio 8, the student enrollment became less White over the last five years. As of 2010, all eight districts enrolled less than 50 % White students. Cleveland Metropolitan School District's White population has declined from 31 % in 1980, to 15 % in 2010. In Dayton Public Schools, the percentage of White students has declined from 43% to 25 % (Churchill, 2013).

Instrumentation

The Ohio Achievement Assessment (OAA) reading and writing data from the initial collection year will determine 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 will be used to determine the baseline for all second graders. The following two years of OAA data will reflect both the treatment group (Discovery choice) and control group (home schools) in the two respective research environments. The district maintains a central point of data collection for student attendance, discipline referrals, and teacher attendance. The psychometric analysis for the May administration of the 2012-13 and 2013-14 Ohio Achievement

Assessments as performed by the Ohio Department of Education (ODE, 2014) are located in Table 3. Reliability is estimated using Cronbach Alpha, α .

Table 3. *Reliability Estimates for 2012/2013 and 2013/2014*

Year	Grade	Reading	Math
2012/2013	3	0.86	0.87
	4	0.84	0.90
	5	0.86	0.91
	6	0.86	0.90
	7	0.86	0.91
	8	0.86	0.91
2013/2014	3	0.87	0.87
	4	0.89	0.90
	5	0.87	0.91
	6	0.87	0.90
	7	0.86	0.91
	8	0.85	0.90

School year 2012-13 was the year before the Discovery program started. All Youngstown City School District students in grades 3-8 were in their home schools. The school Year 2013-14 was the first year for Discovery program. In the fall of each year, the third grade was only given the reading OAA. In the spring of each year, grades 3-8 were given both the reading and math Ohio Achievement Assessment.

Procedures

The current investigation will include data from all Youngstown City School District students who attend grades second through eighth during the 2012-2013 school year, and remain in the district through the 2014-2015 school year. Student achievement data will be retrieved through the district's central collection of student data profiles. The OAA test in reading and math, administered in the spring in grades three through eight,

will be collected during the research window. The state diagnostic tests' scores in reading and math will be used for the second grade 2012-2013 as baseline.

As indicated, students enrolled in the Discovery program will be considered the treatment group; non-participants will be considered control group members. There will be no overlap in the participant groups; group membership will be mutually exclusive. Discovery students are engaged in all of the Discovery activities and curriculum that are supported by the three fundamental components of the program: 21st Century Learning Skills, technology supported curriculum, and the learning community relationships. Teachers in all six of the discovery areas work with the general education teachers to integrate value-added activities in the core district curriculum. An example can be found in Appendix A.

Proposed Data Analysis

Both descriptive and inferential statistics were used to address research questions outlined above. Reliability estimates and tests of statistical assumptions were used to guide the analysis best suited for the data. Various forms of data analysis were incorporated in an effort to address each proposed research question.

Chapter 4

Data Review

The Ohio Achievement Assessment (OAA) reading, writing, and math data from the initial collection year determined the measured baseline data for grades three through seven, 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). Two research groups, treatment and control, were identified for the purpose of this research. The pre- and post-assessment data identifying with the spring OAA were collected over the two year research period. The control group included students that elected to remain at their home school from the fall of 2012 through the spring of 2015. The control group represented 1,844 students, or 80% of the third through eighth grade students, in the district. The treatment group represented 320 students, or 20% of the same population, that chose to attend the Discovery program starting in the fall of 2013. Tables 4 through 16 describe the make-up of both the status (control or treatment) and term (pre- or post-assessment). Status includes school, grade, gender, race, disability, and retention. The control group are students that remain at their home school and the treatment group are those students that elected to go to the Discovery program.

Table 4. *Control and Treatment Students*

	Control	Treatment
Pre	1828	320
Post	1890	301

The frequency of students by grade in both the control and treatment groups can be seen in the pre-assessment data found in Table 5.

Table 5. *Pre - Assessment Students by Grade*

Control	Frequency	Percent	Treatment	Frequency	Percent
Grade 3	335.00	18.30	Grade 3	60.00	18.70
Grade 4	301.00	16.40	Grade 4	85.00	26.60
Grade 5	244.00	13.40	Grade 5	90.00	28.10
Grade 6	296.00	16.30	Grade 6	33.00	10.30
Grade 7	347.00	18.90	Grade 7	28.00	8.80
Grade 8	305.00	16.70	Grade 8	24.00	7.5

As per design of the Discovery program, student data from the treatment group return to the home school. The pre-assessment frequency of students in both the control and treatment groups by home school can be seen in Table 6.

Table 6. *Pre - Assessment Students by Home School*

Control	Frequency	Percent	Treatment	Frequency	Percent
Chaney	343.00	18.60	East	52	16.30
East	259.00	14.00	Harding	48	15.00
Harding	178.00	9.70	McGuffey	86	26.90
McGuffey	267.00	14.50	MLK	29	9.10
MLK	171.00	7.00	P. C. Bunn	30	9.40
P. C. Bunn	130.00	7.00	Taft	21	6.60
REC	154.00	8.40	Williamson	54	16.90
Taft	195.00	10.60			
Williamson	147.00	8.00			

This study proposes to examine gender, race, disability, and retention as potential moderator variables to determine any contributing effect. Students for the treatment group were self-selected. The self-selection acceptance process resulted in a gender breakdown that was reversed between the control and treatment groups. The gender breakdown for both the pre-assessment control and treatment groups can be seen in Table 7.

Table 7. *Pre – Assessment Students by Gender*

Control	Frequency	Percent	Treatment	Frequency	Percent
male	968.00	52.50	male	153.00	47.80
female	876.00	47.50	female	167.00	52.20

The self-selection acceptance process resulted in a racial composition that was a 6% decrease in Black and a 4% increase in White frequency when comparing the control and treatment pre-assessment groups. The race breakdown for both the pre-assessment control and treatment groups can be seen in Table 8.

Table 8. *Pre - Assessment Students by Race*

Control	Frequency	Percent	Treatment	Frequency	Percent
Black	1218.00	66.10	Black	192.00	60.00
Hispanic	247.00	13.40	Hispanic	47.00	14.70
Mixed	106.00	5.70	Mixed	20.00	6.30
White	269.00	14.60	White	59.00	18.40

The different special education classifications were not used in determining these numbers. A student was either on an IEP or not. The disability composition of both groups shows that a smaller percentage of students requiring special education services self-selected to participate in the Discovery program. The number of pre-assessment IEP (individual education plan) students for both the control and treatment groups can be found in Table 9.

Table 9. *Pre - Assessment Students by Disability*

Control	Frequency	Percent	Treatment	Frequency	Percent
no	1430.00	77.50	no	276.00	86.30
yes	414.00	22.50	yes	44.00	13.80

There were no students retained in the treatment group compared to almost 2.5% of the control group that had been previously retained. The number of pre-assessment, retained students before the two year window of this research can be seen in Table 10.

Table 10. *Pre - Assessment Students Retained*

Control	Frequency	Percent	Treatment	Frequency	Percent
no	1800.00	97.60	no	320.00	100.00
yes	44.00	2.40	yes	0.00	0.00

Only students with the same status who remained in the district were included in the post-assessment data. The post-assessment control and treatment frequency data by grade and homeschool can be seen in Table 11.

Table 11. *Post - Assessment Students by Grade*

Control	Frequency	Percent	Treatment	Frequency	Percent
Grade 3	324.00	17.00	Grade 3	60.00	18.80
Grade 4	339.00	17.80	Grade 4	85.00	26.60
Grade 5	286.00	15.00	Grade 5	90.00	28.10
Grade 6	284.00	14.90	Grade 6	33.00	10.30
Grade 7	340.00	17.90	Grade 7	28.00	8.80
Grade 8	317.00	16.70	Grade 8	24.00	7.50

The Discovery program design had all student data from the treatment group returned to the home school. The post-assessment frequency of students in both the control and treatment groups by home school is found in Table 12.

Table 12. *Post - Assessment Students by Home School*

Control	Frequency	Percent	Treatment	Frequency	Percent
Chaney	284.00	14.90	Chaney	52.00	17.30
East	329.00	17.30	East	39.00	13.00
Harding	202.00	10.60	Harding	29.00	9.60
McGuffey	285.00	15.00	McGuffey	54.00	17.90
MLK	173.00	9.10	MLK	25.00	8.30
P C Bunn	136.00	7.20	P C Bunn	19.00	6.30
REC	128.00	6.70	REC	25.00	8.30
Taft	191.00	10.00	Taft	32.00	10.60
Williamson	174.00	9.10	Williamson	26.00	8.60

There were 3% fewer males and 3% more females in the post-assessment treatment group compared to the control group. The breakdown of genders of participants is presented in Table 13.

Table 13. *Post – Assessment Students by Gender*

Control	Frequency	Percent	Treatment	Frequency	Percent
male	1013.00	53.30	male	152.00	50.50
female	889.00	46.70	female	149.00	49.50

The self-selection acceptance process resulted in a racial composition that was a 5% decrease in Black and a 3% increase in White frequency. The race breakdown for both the post-assessment control and treatment groups can be seen in Table 14.

Table 14. *Post - Assessment Students by Race*

Control	Frequency	Percent	Treatment	Frequency	Percent
Black	1257.00	66.10	Black	184.00	61.10
Hispanic	247.00	13.00	Hispanic	47.00	15.60
Mixed	113.00	5.90	Mixed	18.00	6.00
White	279.00	14.70	White	52.00	17.30

A student was either on an IEP or not. There was a slight percent increase in the number of post-assessment treatment students with an IEP. The number of post-assessment disability frequency can be found in Table 15.

Table 15. *Post - Assessment Students by Disability*

Control	Frequency	Percent	Treatment	Frequency	Percent
no	1482.00	77.90	no	242.00	80.40
yes	420.00	22.10	yes	59.00	19.60

There was a slight increase in retained post assessment treatment students. As seen in Table 16, shows how many students in each group were retained in the post-assessment year.

Table 16. *Post - Assessment Students Retained*

Control	Frequency	Percent	Treatment	Frequency	Percent
no	1482.00	77.90	no	296.00	98.30
yes	420.00	22.10	yes	5.00	1.70

Preliminary Analyses

In an effort to determine the most appropriate analyses for answering each of the research questions, preliminary analyses were used to understand the relationship between variables and the tenability of statistical assumptions. Initially, zero-order correlations were conducted between the dependent variables and moderator variables of

interest. As seen in Table 17 and Table 18, there are large, significant positive correlations between all dependent variables examined for the pre-treatment period and the post-treatment period.

Table 17. *Pre -Treatment Correlations*

Assessment	1	2	3
(1)Spring OAA Reading Correlation	-	-	-
(2)Spring OAA Math Correlation	.680**		-
(3)Spring OAA Science Correlation	.705**	.678**	-

Note. ** Correlation is significant at the 0.01 level (2-tailed).

Table 18. *Post-Treatment Correlations*

Assessment	1	2	3
(1)Spring OAA Reading Correlation	-	-	-
(2)Spring OAA Math Correlation	.697**	-	-
(3)Spring OAA Science Correlation	.685**	.688**	

Note. ** Correlation is significant at the 0.01 level (2-tailed).

A Levene’s test of Homogeneity of Variance was used to evaluate if the variance of the dependent variable is homogeneous across the two groups (treatment and control).

Table19 presents the results of the Levene’s test.

Table 19. *Levene’s Test of Homogeneity of Variance*

	F	df1	df2	Sig.
Spring OAA Reading Scaled Score	0.772	3	942	0.51
Spring OAA Math Scaled Score	2.629	3	942	0.05
Spring OAA Science Scaled Score	0.843	3	942	0.47

Based on the results of the Levene’s Test, homogeneity of variance is tenable for all assessments with the exception of Spring OAA Math Scale Score ($p = .05$). This is not a

concern for the conclusion validity of this investigation as the violation of this assumption is not problematic when there is an error variance df greater than $n = 20$ (Tabachnick & Fidell, 2007).

Lastly, Box's M test was used to examine the Homogeneity of the Covariance Matrices for the dependent variables. This test reveals whether the covariances of the dependent variables are equal across the different groups (treatment and control). Based on this analysis, the assumption of equality of covariance matrices was found to be tenable, $F(18, 45224) = 1.57, p = .052$. Based on the preliminary analyses and statistical assumption test, multivariate analysis of variance was determined to be the most appropriate analysis for the current investigation.

Multivariate Analysis of Variance for Group Membership and Term

Initially, 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 20.

Table 20. *Pre- and Post-Means for 2012-2013 to 2013-2014 Assessment Periods*

Spring Testing	Control			Treatment		
	Pre	Post	Δ	Pre	Post	Δ
OAA Reading Scale Score	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 Score	393.42	382.61	-10.81	387.34	398.86	11.52

As seen in Table 20, the control group pre-intervention data are higher than the treatment groups pre-intervention data across all three content areas.

MANOVA analyses were conducted, revealing a significant interaction for group (treatment or control) by term testing period (2012-2013 or 2013-2014), based on Hotelling's Trace analysis, $F(3,940) = 5.28$, $p = .001$. This indicates that when examined simultaneously, the three dependent variables of the spring assessment period reveal a significant effect for group membership across the pre- to post-data collection. Specifically, as illustrated in Figure 1, treatment student test scores revealed substantial gains from pre- to post-intervention, relative to control group student score's on the same measures.

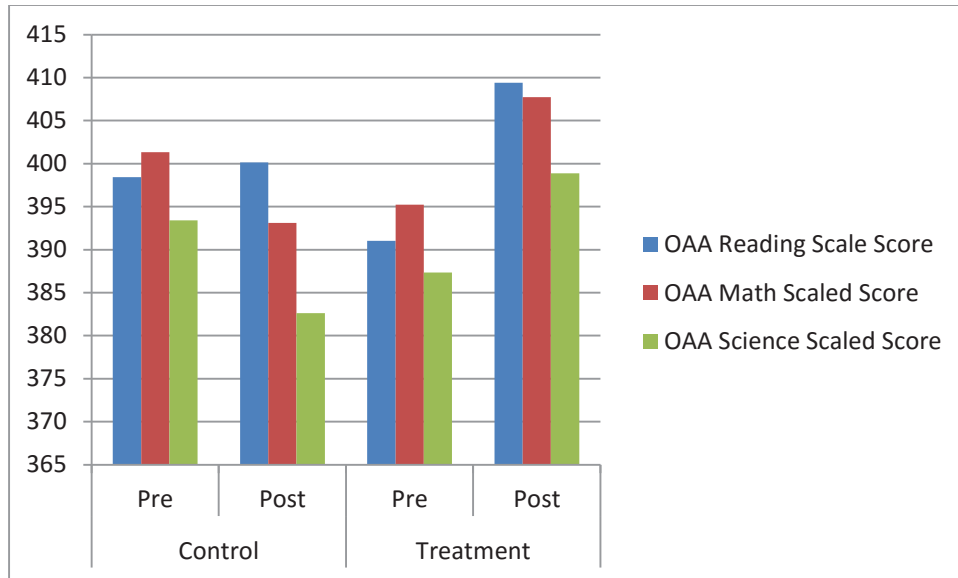


Figure 1. Pre- and Post-Means for 2012-2013 to 2013-2014 Assessment Periods

The results of the MANOVA analyses Test of Between-Subjects Analyses are presented in Table 21.

Table 21. Interaction across All Three Assessment Areas

Source	Dependent Variable	F	Sig.	Partial Eta Squared
term	RdgScaleScore	11.04	0.00	0.01
	MathScaledScore	0.44	0.51	0.00
	ScienceScaledScore	0.02	0.90	0.00
Status	RdgScaleScore	0.09	0.76	0.00
	MathScaledScore	1.77	0.18	0.00
	ScienceScaledScore	3.14	0.08	0.00
term * Status	RdgScaleScore	7.63	0.01	0.01
	MathScaledScore	10.49	0.00	0.01
	ScienceScaledScore	15.12	0.00	0.02

The data revealed a significant interaction between term and status for each of the three test areas. The model with term explained $R^2 = .017$ (Adjusted R Squared = .014), and the model with status explained $R^2 = .032$ (Adjusted R Squared = .028). However, $R^2 = .054$

(Adjusted R Squared = .051). These results are best illustrated in three separate graphical illustrations below. Figure 2 provides a visual depiction of the data for the Spring OAA Reading Scale Scores across the two groups during the pre- to post-intervention period.

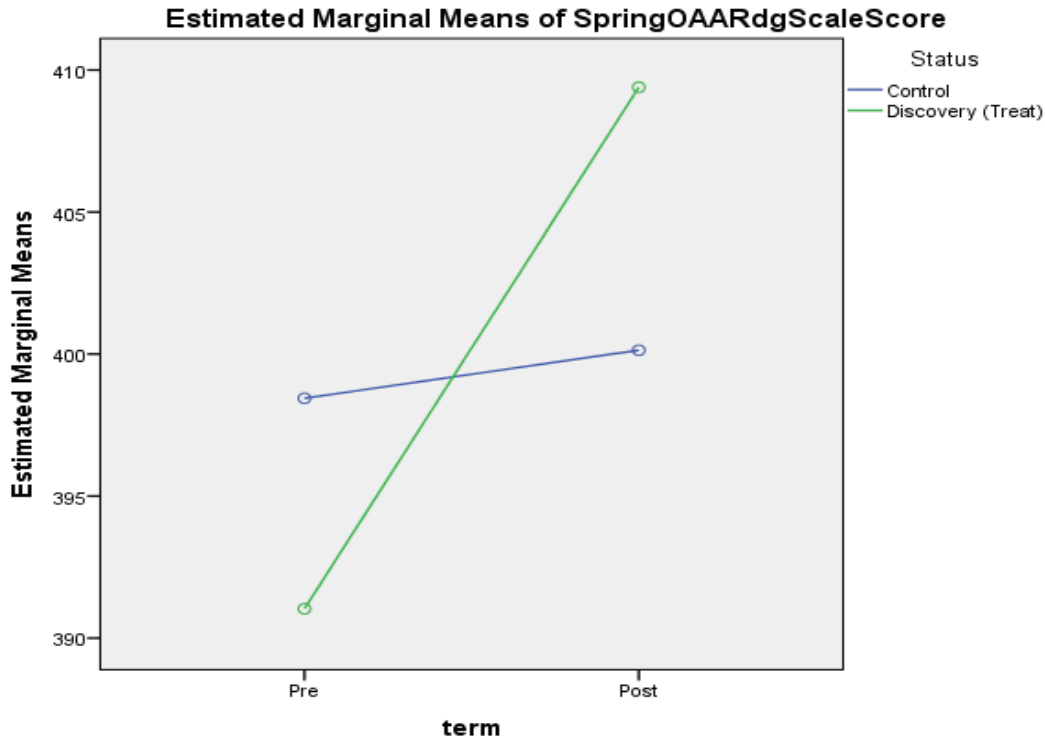


Figure 2. Reading Mean Comparison

As indicated in Figure 2, treatment group pretest scores are below control group pretest scores however this pattern is inverted at posttest. Figure 3 provides a visual depiction of the data for the Spring OAA Math Scale Scores across the two groups during the pre- to post-intervention period.

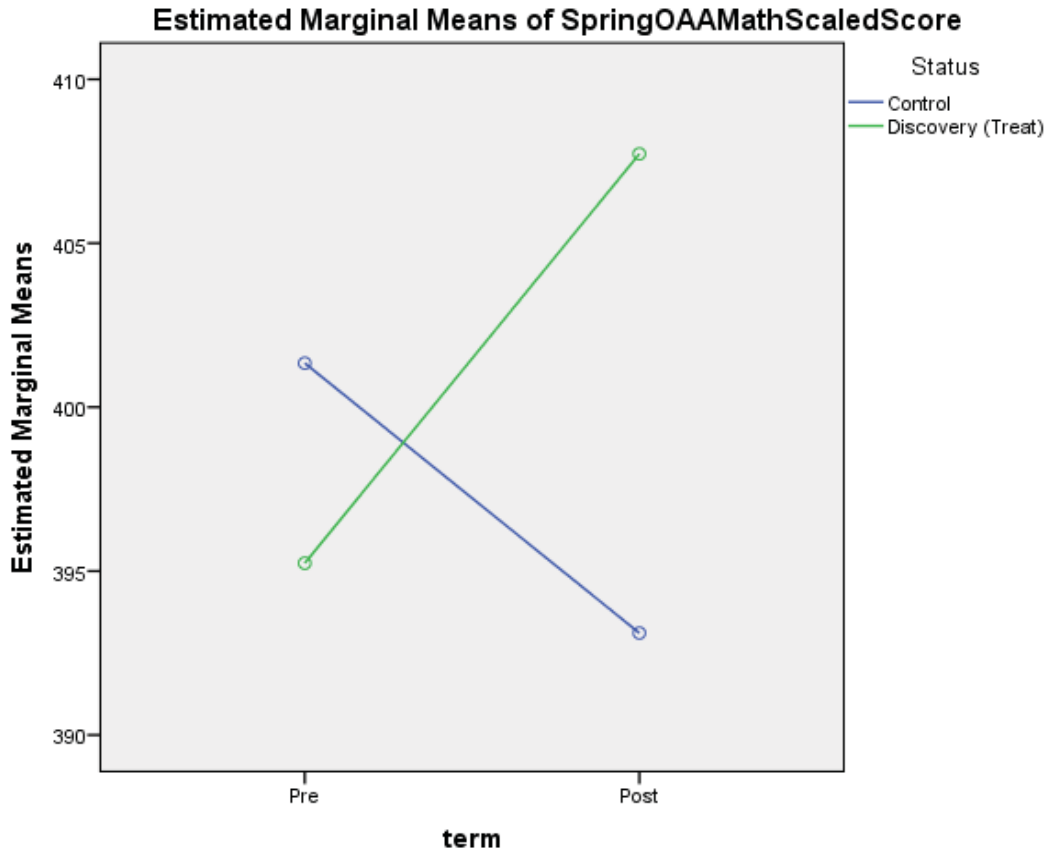


Figure 3. Math Mean Comparison

As seen in Figure 3, the pattern of math assessment scores was the same as the reading scores. However the gap at posttest is larger for the math assessment scores than it is for the reading scores. Figure 4 provides a visual depiction of the data for the Spring OAA Science Scale Scores across the two groups during the pre- to post-intervention period.

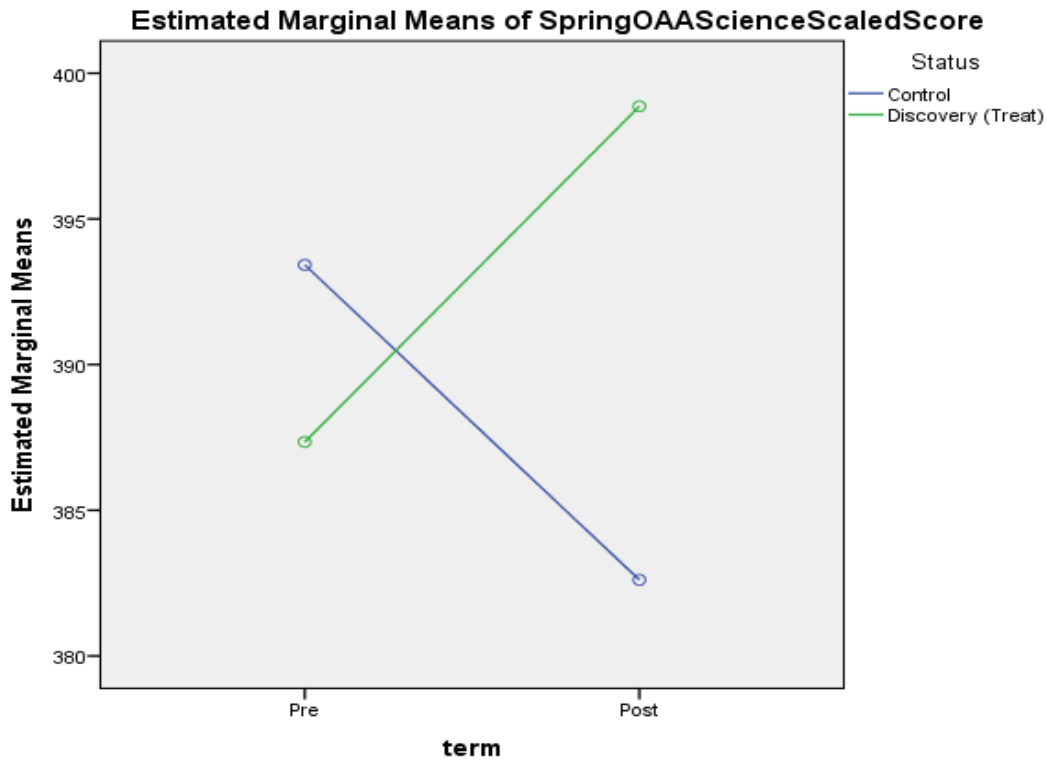


Figure 4. Science Mean Comparison

The pattern of science score replicates the pattern of math and reading scores as seen in Figure 4.

Multivariate Analysis of Variance for Moderators

Initially, zero-order correlations were used to examine the relationship between the three assessment content areas and the potential moderator variables across the pre- and post-testing period. This data are presented in Table 22 and 23.

Table 22. *Pre-Term Variable Correlations*

	OAA Reading Scaled Score	OAA Math Scaled Score	OAA Science Scaled Score
Current Grade	-.11**	-.15**	0.00
Retained Status	-.11**	-.09**	-.13*
Race	.11**	.12**	.18**
Gender	.13**	0.04	-0.00
Disability Code	-.33**	-.30**	-.21**

Note. Correlation is significant at the 0.01 level, *0.05 level (2-tailed).

Table 23. *Post-Term Variable Correlations*

	OAA Reading Scaled Score	OAA Math Scaled Score	OAA Science Scaled Score
Current Grade	-.04*	-.044*	0.03
Retained Status	-0.03	-0.04	-0.06
Race	0.03	0.03	0.02
Gender	-0.03	-0.03	0.01
Disability Code	-.052*	-0.02	-0.03

Note. Correlation is significant at the 0.01 level, *0.05 level (2-tailed).

As revealed in Tables 22 and 23, fewer significant correlations are found between the potential moderator variable and the three content area assessments during the post-testing period relative to the pre-testing period.

Additional assumption analyses were conducted prior to running a second MANOVA. This included a Levene's Test and a Box's M test. The results of the Levene's Test are provided in Table 24.

Table 24. *Levene's Test of Homogeneity of Variance*

Levene's Test of Equality of Error Variances				
	F	df1	df2	Sig.
Spring OAA Reading Scaled Score	1.24	31	914	0.18
Spring OAA Math Scaled Score	2.63	31	914	0.01
Spring OAA Science Scaled Score	0.84	31	914	0.21

Based on the results of the Levene's Test, homogeneity of variance is tenable for all assessments with the exception of Spring OAA Math Scale Score ($p = .007$). This is not a concern for the conclusion validity of this investigation as the violation of this assumption is not problematic when there is an error variance df greater than $n = 20$ (Tabachnick & Fidell, 2007). Lastly, Box's M test was used to examine the Homogeneity of the Covariance Matrices for the dependent variables. This test reveals whether the covariance of the dependent variables is equal across the different groups (treatment and control). Based on this analysis, the assumption of equality of covariance matrices was found to be tenable, $F(126, 8794) = 1.16, p = .104$. Based on the statistical assumption tests, multivariate analysis of variance was determined to be the most appropriate analysis to examine the impact of the race and disability moderators.

MANOVA analyses were conducted with all potential moderator variables. Current grade, retained status, and gender were not retained as moderators in this MANOVA due to incomplete data, list-wise deletion processes, and lack of statistical significance. The final MANOVA provides aggregate changes in assessment scores by race and disability, across the two groups, in Table 25.

Table 25. Average across 2012-2013 to 2013-2014 by Disability / Reading and Math

	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 25, 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. Figure 5 provides a visual depiction of these values.

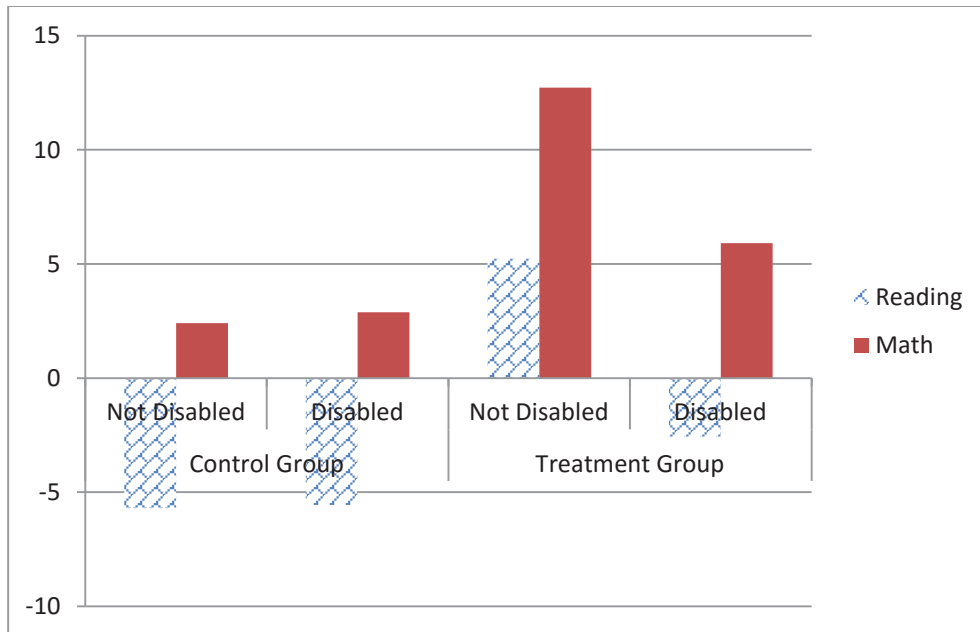


Figure 5. Average across 2012-2013 to 2013-2014 by Disability / Reading and Math

Appendix E provides data broken down by race, disability, and group membership. Table 26 provides the aggregate change scores for the different race groups.

Table 26. Average across 2012-2013 to 2013-2014 by Race / Reading and Math

	Control					Treatment			
	Black	Hispanic	Mixed	White		Black	Hispanic	Mixed	White
Reading	-4.33	-6.26	-0.52	-2.99	Reading	0.06	2.24	-3.83	6.18
Math	3.51	4.82	2.08	6.61	Math	8.16	4.62	10	15.56

As indicated in Table 26, change scores across all race groups are larger for the treatment group relative to the control group. As visual depiction is provide in Figure 6.

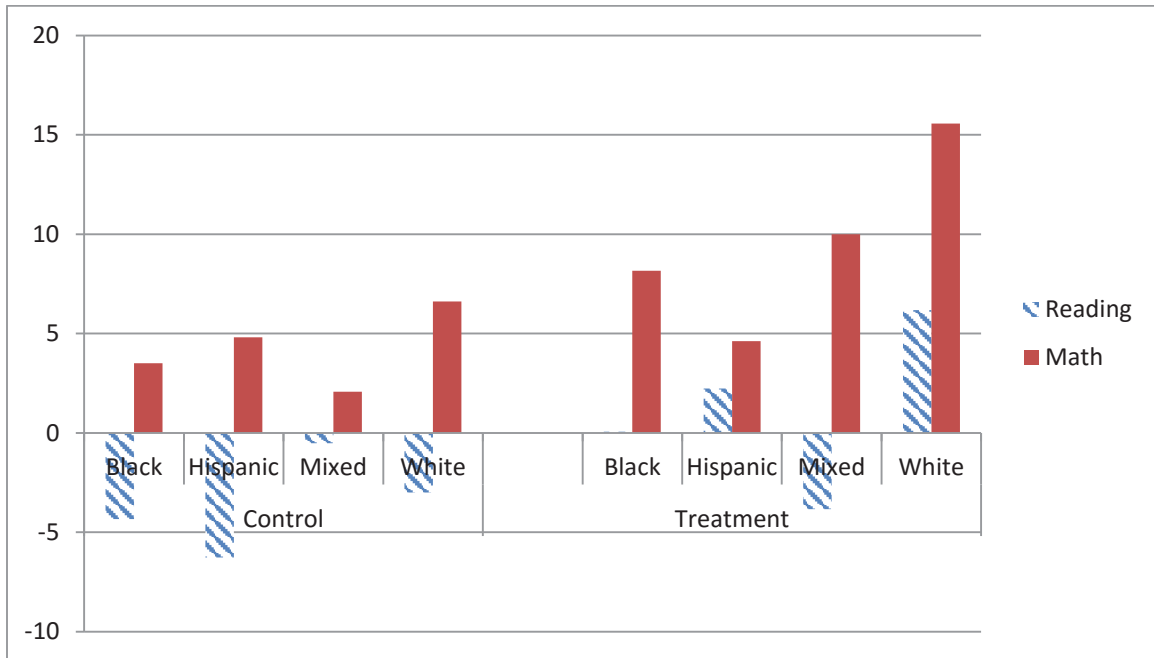


Figure 6. Average across 2012-2013 to 2013-2014 by Race / Reading and Math

The results of the multivariate test are presented in Table 27.

Table 27. *Multivariate Tests^a Based on Hotelling's Trace Analysis*

	F	Error df	Sig.
Disability	4.04	912.00	0.01
Race	1.25	2732.00	0.24
term * Status * Disability	.95	912.00	0.42
term * Status * Race	1.15	2732.00	0.32

As seen in table 27, there is no significant interaction found for term by Group membership by disability or by race. A significant main effect is revealed for disability in this multivariate analysis. However, this significant result is influenced by the different samples sizes of the disability membership and therefore should be interpreted with caution. Results of the test between-subject effects is provided in Table 28.

Table 28. *Tests of Between-Subjects' Effects*

Source	Dependent Variable	F	df	Sig.
Disability	OAA Reading Scaled Score	9.63	1	0.00
	OAA Math Scaled Score	10.08	1	0.00
	OAA Science Scaled Score	4.60	1	0.03
Race	OAA Reading Scaled Score	0.99	4	0.41
	OAA Math Scaled Score	1.41	4	0.23
	OAA Science Scaled Score	2.27	4	0.06
term * Status * Disability	OAA Reading Scaled Score	0.01	1	0.94
	OAA Math Scaled Score	0.19	1	0.66
	OAA Science Scaled Score	0.83	1	0.36
term * Status * Race	OAA Reading Scaled Score	0.88	3	0.45
	OAA Math Scaled Score	0.67	3	0.57
	OAA Science Scaled Score	0.01	3	1.00

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, 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 influenced by the different samples sizes of each racial groups and disability groups, and, therefore, should be interpreted with caution.

Additional Moderator Analyses

As indicated above, retention status, gender, and grade level were not supported as moderators in the previous analyses. Students who were retained represented a very small segment of the sample ($n = 92$). Two univariate ANOVAs were used to examine the impact of gender and grade in the significant interaction of group membership by intervention term. Results indicate that gender does not significantly impact this interaction for reading or math scores. However, grade level was found to be a significant moderator for interactions, on both reading, $F(4, 3575) = 11.50 = ,p<.001$, and math scores, $F(4, 3575) = 9.31 = , p<.001$. Table 29 provides the specific average reading and math scores for students in each grade, by term and group membership.

Table 29. *Reading and Math Scaled Scores by Grade by Term by Group*

Grade Level		Group	Reading		Math	
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
		Treatment	383.35	424.50	382.50	415.06

As indicated in Table 29, change 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. Visual depiction is provided in Figure 7.

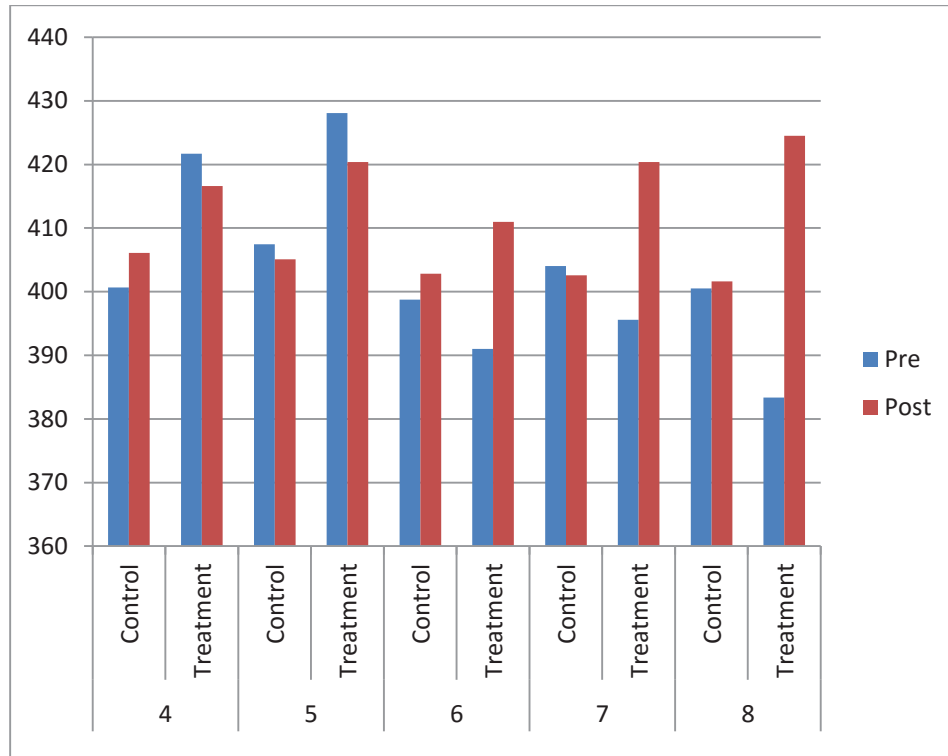


Figure 7. Reading Scaled Scores by Term by Grade by Group

As seen in Figure 7, the pattern of reading assessment scores significantly increases for the treatment group starting with grade 6. This was also found to be the pattern for math assessment scores. Figure 8 provides a visual depiction of the math scores indicated in Table 29.

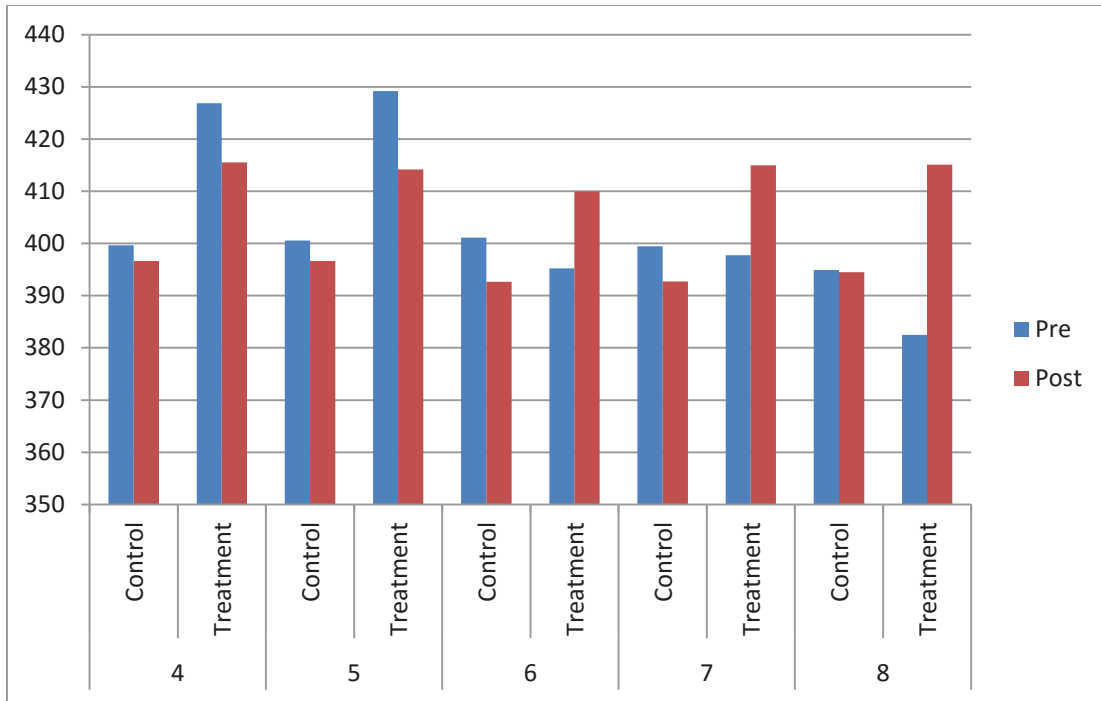


Figure 8. Math Scaled Scores by Term by Grade by Group

Third Grade Repeated Measures

Third grade data were extracted for further analysis. Third grade students (2012-2013) provided three data points, unique from other grade level groups. A repeated measures ANOVA was used to analyze whether any differences were found between the two groups (treatment and control) across the treatment period (pre- to post-). Table 30 provides average assessment scores of the same students across three testing periods.

Table 30. Mean Assessment Reading Score for 2012-2013 Third Graders

	Control (n = 230)	Δ	Treatment (n = 73)	Δ
Fall 2012	381.40		401.78	
Spring 2013	400.24	18.84	421.66	19.88
Spring 2014	411.74	11.50	428.86	7.2

As seen in Table 30, all groups showed increases across the three testing periods as expected. Figure 9 provides a visual depiction of this data.

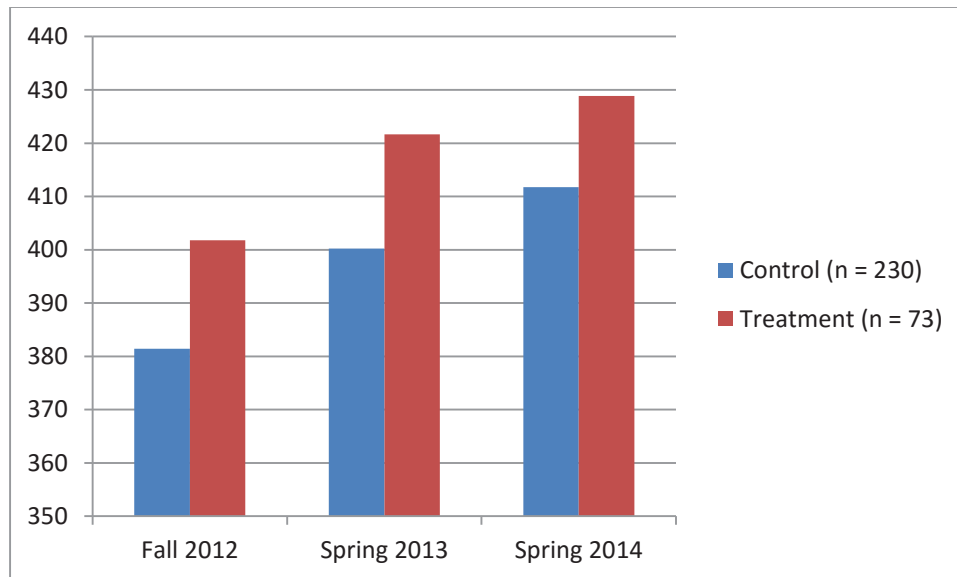


Figure 9. Mean Assessment Reading Score for 2012-2013 Third Graders

Base on Hotelling's trace, there is no significant interaction between testing period and group membership, $F(2,300) = 1.08, p = .34$. However, the repeated measured analysis reveals a significant increase across the three testing periods, $F(2,300) = 210.33, p < .001$. This indicates that there was a significant increase in reading assessment scale scores for both groups across the three testing periods, however these increases were not different for the two groups (treatment vs. control).

Summary

Two research groups, treatment and control, composed of all third through eighth grade students in both Youngstown City School District home schools and the district's Discovery program were used in this study. Student scaled scores were used from three administrations of the reading, math, and science spring OAA test to determine pre- and post- comparisons. Along with the term scaled score dependent variable, other potential

status independent variable moderators were included in the data set to determine if there was any effect. Those potential moderators included school, grade, gender, race, disability, and retained status. Preliminary correlation analyses were used to understand the relationship between variables and the tenability of statistical assumptions. It was found that there are large significant positive correlations between all dependent variables examined for the pre-treatment period and the post-treatment period.

Following the preliminary correlations analysis, a multivariate analysis of variance for group membership / term and race / disability were conducted. Assumption test supported the use of MANOVA as the most appropriate analyses for answering research questions regarding term and group membership. MANOVA analyses were used to determine a significant interaction for group membership by term testing period (2012/2013 or 2013/2014). A second MANOVA revealed aggregate changes in assessment scores by race and disability, across the two groups. A univariate analysis was used to examine gender and grade level. This analysis revealed a significant difference for grade level across group membership and intervention term.

Third grade data was also extracted for grade level specific analyses since three assessment periods were available with this group in reading. A repeated measures ANOVA was used to analyze whether any differences were found between the two groups. While significant increases were revealed across assessment periods (fall 2012, spring 2013, and spring 2014) no differences in these increases were found for group membership.

Chapter 5

Discussion

The general purpose of the current investigation is to examine the effect on student achievement when intra-district choice options are available to parents and students. The results provide sufficient evidence to reject the null hypothesis (intra-district choice does not have an impact on student achievement) as statistical testing indicates significant difference in test scaled scores between the treatment students and the control students. More specifically, the study addresses four research questions. Transformation efforts in 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 inner-city school transformation body of research pertaining to school climate, inquiry project-based learning, 21st learning skills, and parent/student choice. For the purpose of this investigation, choice only referred to program choice embedded within a district in the third through eighth grade without restrictions, but requiring an application, 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 investigated school choice that embraced changes within the district's existing instructional framework.

Chapter Five summarizes the findings for each research question and briefly discusses each outcome in the context of current research. This chapter also includes a set of conclusions that can be drawn from the results of the dissertation, limitations of the study, recommendations for future research, and implications for practice.

The current investigation examined the impact of the Youngstown City School District's Discovery choice program on student achievement. This investigation compared the students' achievement on the grade 3-8 Ohio Achievement Assessment (OAA), before and after attending the Discovery choice program. Student scaled score performance for Reading, Math, and Science on the Ohio Achievement Assessment (OAA) was the student performance data set.

The treatment group included all of the students who have attended the Discovery choice program beginning in 2013-2014, the initial year of the program, and continued in the program during 2014-15. The control group included all of the students in the same grades that did not apply for program participation, and remained in their neighborhood schools. The comparative data included the years 2012-2013 through 2013-2014. Only two data points were available at the time of this investigation to determine significant effect for both dependent variables and all moderators except for comparative scores used to determine the Third Grade Guarantee. The 2014-15 spring scores were not released by the Ohio State Department of Education in the same time frame as in previous years, and hence could not be used in this study.

The total student population involved in the study was 2,041. The control group consisted of 1,811 students that remained in their neighborhood schools. The treatment group consisted of 230 students who attended Kirkmere Discovery intra-district Choice

for two consecutive years. This investigation also analyzed the effect of gender, race, economically disadvantaged status, and retention status prior to the investigation.

Findings for each research question are summarized and discussed below.

Research Question 1: What is the impact of the intra-district choice program on student achievement for students electing to participate in the program (treatment group) relative to students who do not participate in the program (control group)?

Few studies have examined the effects of intra-district choice programs on student achievement in inner-city public schools. Much of school choice research has been focused upon effects associated with charter schools, voucher programs, and inter-district choice. Analyses were used to understand the relationship between gender, race, disability, and retention status independent variables, and the tenability of statistical assumptions. Initially, zero-order correlations were conducted between the dependent variables and moderator variables of interest. It was found that there were large, significant, positive correlations between all dependent variables examined for the pre-treatment period and the post-treatment period. Initially, pre- and post-intervention means for the treatment and control groups were examined across the dependent variables of Spring Testing Scores.

Overall, the control group pre-intervention scores were higher than the treatment group pre-intervention data across all three content areas. One argument surrounding student achievement, associated with choice programs, is that only the high performing students get into the programs therefore artificially increasing student performance in the choice programs compared to the traditional schools. Earlier Youngstown City School District choice programs, including Youngstown Early College 9-12, Rayen Early

College 6-8, Chaney Campus STEM-VPA 6-12, had specific academic requirements in the application process. Although students out-performed the students that were not in those programs, higher achieving students were the only ones who could participate in those programs, and, therefore, higher achievement levels would be expected. This was not true for the current study.

This investigation measured treatment student test scores revealing substantial gains from pre- to post-intervention, relative to control group student scores during the same term (Figure 1). The Discovery program had no academic entry requirement, therefore, any Discovery student overall performance gains should not be attributed to 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 if the gains are distributed equally across all grades, or, are grade specific. It was found that the greatest gains were measure in grade 6 though 8.

The conclusions drawn for this investigation used scaled scores 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, 2010a; 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 status groups, like previous research, but examine the impact within each status group. And, as indicated by the findings, the students in the treatment group, whose mean scores were below the students in the control group, demonstrated substantial gains and out-scored students in the control group after one year of programming.

Research Question 2: What is the change in student achievement for students in the treatment and control group, before and after the first year of the choice program?

Grade level of the student was found to be a significant moderator for interactions, on both reading and math scores. Two univariate ANOVAs were used to examine the impact of grade in the significant interaction of group membership by intervention term. 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 reading and math assessment scores significantly increased for the treatment group in grades six, seven, and eight. The more significant gains were found when comparing both group membership pre- and post-assessments. The cut scale score demonstrating proficiency was 400 for all years of this investigation. It is noteworthy that, during the period of this investigation, the average reading score for all control and treatment grades was above the 400 cut score after two years.

A review of specific average reading scores for students in each grade, by term and group membership, found a decline in the achievement for treatment students going from grade 3 to 4 (-5.06) in comparison to the same grade control group (+5.39). An achievement decline was also discovered for both control and treatment students going from grade 4 to 5. The treatment students declined (-7.73) in comparison to the same

grade control group (-2.33). All other control and treatment groups advancing one grade demonstrated average reading gains (grade 5 to 6 - C+4.07 / T+19.97), (grade 6 to 7 - C+3.80 / T+29.38), (grade 7 to 8 - C+1.08 / T+41.15). Noteworthy, are the reading gains realized by the treatment grade group after completing a second year, showing gains of 5% to 11% over the same grade control group gains.

A review of specific math scores for the same grade advancement had similar results (grade 3 to 4 - C-3.04 / T-11.33; grade 4 to 5 - C-3.94 / T-15.01; grade 5 to 6 - C-8.47 / T+14.72; grade 6 to 7 - C-6.70 / T+17.20; and grade 7 to 8 - C-.44 / T+32.56). Noteworthy, is that, in the second year, no control grade groups demonstrated an average proficient score and all treatment grade groups did demonstrate an average above the proficient 400 score. The largest gains were once again in the treatment 5th through 8th grades (4% to 9%). As indicated by the findings, after two years, the average reading and math scaled scores in the treatment group demonstrated, in grades 6 to 8, substantial gains and out-scored students in the control group during the same period.

Policymakers nationwide have wrestled with the basic question: At what grade level should students move to a new school? In the most common grade configuration in American school districts, public school students make two school transitions, entering a middle school in grade 6 or 7, and a high school in grade 9. This pattern has all but eliminated the K–8 school from the American education landscape. This pattern is also true for the control in this investigation, but not true for the Grade 3 through 6 treatment group in the Discovery program.

A study done 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. As an extension of the 2010 study, in a study titled *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 supported a case for middle-school reform. The study showed, 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 study found supporting results to their findings and provides promising evidence for addressing the decline in student achievement found in the middle school transition discussion. This study also showed significant gains in grades 6 to 8 in the discovery program where there was not transition year moving from grade 5 to 6 as found in the control group experience. The control group all transitioned to a middle school after the 6th grade.

Research Question 3: Are there differences in program impacts for subgroups of students (grade, disability, race, gender, and retained status)?

Zero-order correlations were used to examine the relationship between the three assessment content areas and the potential moderator variables across the pre- and post-testing periods. Few significant correlations are found between the potential moderator variables and the three content area assessments during the post- testing period relative to the pre-testing period.

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. Change scores across all race groups were larger for the treatment group relative to the control group. There was no significant interaction found for term by group membership by disability or by race. A significant main effect was revealed for disability in this multivariate analysis. However, this significant result may have been influenced by the different samples sizes of the disability membership and, therefore, should be interpreted with caution.

It was determined that retention status, gender, and grade level could not be supported as moderators. Students who were retained represented a very small segment of the sampling frame. Two univariate ANOVAs were used to examine the impact of gender and grade in the significant interaction of group membership by intervention term. The results indicated that gender does not significantly impact this interaction for reading or math scores. No significant interaction effect was found for gender, race, and retention status.

The main effect for reading, math, and science was found to be significant only for the disability indicator. A decline in reading for control student achievement was found, regardless if the student held an IEP or not (control reading – ND -5.69 / D -5.56) in comparison to measured gains for treatment students not holding an IEP and a lesser decline for treatment students holding an IEP (treatment reading – ND +5.24 / D -2.57). Gains in math for both control and treatment student achievement were realized, but significantly larger gains were found in the treatment group, regardless of the identification. As indicated by the findings, the non-disabled students in the treatment

group demonstrated substantial gains and out-scored students in the control group after one year of programming. Also indicated by the findings was that disabled students in the treatment group realized less decline than the disabled control group. Therefore, both disabled and non-disabled students benefited by being in the Discovery program.

Additionally, main effect for science across racial groups was significant for the race moderator variable. However, this significant result was influenced by the different samples sizes of each racial groups and disability groups, and, therefore, should be interpreted with caution.

The Discovery program contains the three underpinning foundational blocks to the instructional framework: 21st Century Learning Skills (project based), embedded technology, and school climate. All three points support differentiation of instruction to accommodate all students.

A study conducted by Boaler (2002) compared all student mathematics achievement in two similar secondary schools, one using traditional instruction and the other using project-based instruction. 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. This research along with the middle school research also provide insight to the treatment group gains in grades 6 through 8.

Research Question 4: What other student variables moderate the impact associations between choice programming and achievement (including, but not limited to, student progressive OAA performance data)?

The State of Ohio Third Grade Guarantee impacts every third grade student in both the control and treatment groups. The guarantee stipulates that every exiting third grader will demonstrate proficiency at a specific level of reading. The student must demonstrate on the third grade OAA reading assessment with a minimum scaled score of 396 before advancing to the fourth grade. Third grade data were extracted for additional analysis. The (2012-2013) third grade students provided three reading data points, unique from other grade level groups. The Repeated, measured analysis revealed a significant increase across the three testing periods. It was found that there was a significant increase in reading assessment scale scores for both groups across the three testing periods, however, these increases were not different for the two groups (gains C-8% / T-7%). This might be explained by the district's focused literacy work with both the control and treatment

students in K-3. Literacy coaches were trained in Literacy Collaborative in 2011-1012. A concentration in providing Literacy Collaborative training for teachers targeted coaching, ongoing, embedded, professional development, and benchmark student progress during the school year and were deployed by the district in 2011-12. Literacy Collaborative is a comprehensive approach designed to provide long-term support to schools working toward successful literacy achievement for every child. Schools involved in the project are, for the most part, urban schools with high levels of poverty and mobility. A study was completed by Jane Williams and Gay Pinnell (1999), showing a medium to strong upward trend in schools in which the approach that had been fully completed its third year of district wide implementation in 2014-2015. Scores for schools in the 1998 study were above baseline scores taken in 1995 or 1996. Dramatic improvement was noted in seven of the 12 schools in the study, all of which had high proportions of students with free or reduced price lunch status.

Even though no differences in these increases were found for group membership, significant increases were revealed across assessment periods for all students revealing that the district-wide literacy effort was moving in a gainful direction. Although the results indicate that intra-district choice did not have an effect on Third Grade Guarantee gains, further investigation of the impact of the Literacy Collaborative process should be done.

Implications for Practice

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 21st Learning Skills. This study, although representing student data from one historically low performing, inner city school district, has implications that 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. The research also found the gains to be independent of gender, race, and retention status. 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 successful graduation rates of the treatment group students. For example, as documented in the *At-Risk Conditions of United States School-Age Children* report for 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 are found in diverse, inner city settings where there is a high population of economically disadvantaged African-Americans (Kominski, et al.).

This 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 subgroup within either the control or treatment groups. The conclusions from this investigation indicate that race, gender, and economically disadvantaged are not factors moderating the treatment group's performance levels in either reading or math in this inner city intra-district program. By contrast, one factor that was significant was the length of time enrolled in the Discovery program. This finding contradicts three of the seven reported contributing at-risk factors (Kominski, et al., 2001). The findings of the current investigation support advances in student reading and math achievement results when a student experienced the Discovery program for more than one year, regardless of race, gender, disability, and economically disadvantage status.

It is important to remember this investigation researched the effects on student achievement in an inner city, intra-district choice program with a specific, intra-district choice program design. 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. 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.

Limitations of the Study

Limitations exist within any correlational investigation. In this 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 difference-in-difference design approach in order to approximate the impact of the intra-district choice programming. The results from this investigation are based on two years of data.

Since this research did not use random assignment to determine the control or treatment groups, there may be confounding influences that impact one group that does not impact the other group that are unknown, or are immeasurable. Since self-selection into the treatment group was the inclusion-mechanism, there are a number of reasons that students may not have ended up participating. For example, the Discovery program selection process required that an application be completed by the parent, and a review of attendance and previous discipline data. No student was denied access if the application was submitted on time. For reasons outside of the district's application process, potentially limiting factors most likely occurred. Neighborhood school attendance boundaries and transportation to the Discovery program may have limited family/student participation because it meant having siblings attending multiple locations. Participation may have led to disruptions with after school child care accommodations that were too challenging for some parents to overcome. Many families have limited access to transportation which cripples their ability to be involved with their children and the

program. These two factors may have influenced the decision to submit an application. Although a recruiting strategy targeted direct contact with students and parents, including home visits, the communication of the application process did not assure that all students wishing to attend the Discovery program actually did. These factors may have potentially contributed to both the treatment and control group membership.

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 potential relationship between the fidelity of instructional implementation and its impact on student achievement.

During the three years of this investigation the state only required students to be assessed in the science content area in two of the six tested grades, limiting the scope of the conclusion that could be formulated. Also, changes in the state assessment schematic and decisions changing the process for selecting Discovery administrators and teachers limited the length of this investigation. For those reasons the results from this investigation are based on two years of data. The changes in the assessment tool resulted in a delayed release of the Spring 2015 test scores beyond this investigation and could not

be included in the investigation.

Future Research

Efforts to transform low achieving, inner city school districts has been at the forefront of both the national and state debate. Few studies have specifically looked at inner city, intra-district choice and the different frameworks that are associated with such choice. Any additional studies that attempt to measure the relationship between intra-district choice and student achievement should include some measures of implementation fidelity of instruction practices. The instructional framework of this investigation included three underpinning components. Additional research of intra-district choice should investigate effect of each program component on student achievement. The question remains whether choice or program are what produced the reported student achievement gains. If it is choice, program, or a combination of both, additional research would significantly add to the inner city transformation research.

A longitudinal study following the same students until graduation would support the examination of the relationship between the various implementation factors of the program (21st Century Learning Skills, embedded technology supported curriculum, and school climate) and student achievement in science, social studies, or writing, would be original research and provide insight into the relationship between intra-district choice and program implementation. Fidelity of the Discovery program and the Youngstown City School District's district-wide instructional framework could be measured in a future case study, allowing the researcher to examine implementation fidelity and student impact from a number of perspectives: principals, teachers, students, and parents.

This investigation was limited by the required state assessments and any changes within those requirements over time. Future research should consider a broader look at effects beyond reading and math.

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Appendix A

Appendix A - Integrated Discovery Lesson - Project Based Learning

Project Titled: "The Youngstown Project" Grade 6-8

Math, Grade 6

- Students will demonstrate the ability to make tables, graphs, and charts of measurements, equivalent ratios, percentages, and quantities.
- Students will demonstrate the ability to use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation.
- Students will demonstrate the ability to recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers.

Math, Grade 7

- Students will demonstrate the ability to compute unit rates associated with ratios of fractions, including ratios of lengths, areas, and other quantities measured in like or different units.
- Students will demonstrate the ability to solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from scale drawing and reproducing a scale drawing at different scale.

Math, Grade 8

- Students will demonstrate the ability to use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.
- Students will demonstrate the ability to define appropriate quantities for the purpose of descriptive modeling.
- Students will demonstrate the ability to represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or non-viable options in a modeling context.
- All classes will demonstrate all five of the following skills.
 1. Team Building - Cooperative Learning;
 2. Inquiry;
 3. Critical Thinking;
 4. Small and Large Group Oral Presentations; and
 5. Written Communication.
- Students will demonstrate the ability to work successfully as members of a team to achieve a common goal. Students will demonstrate a basic understanding of the design process.
- Students will demonstrate the ability to brainstorm effectively and to think critically to categorize and prioritize ideas.
- Students will demonstrate the ability to locate and plot points on a map and events on a timeline.

- Students will demonstrate creativity and innovation in creating, preparing, and presenting information orally and in writing.

Sample: Problem Based Learning

3rd Grade Sail Car Lesson

The following lesson is an adaptation of the lesson found on PBS Kids at:
http://pbskids.org/dragonflytv/web_assets/pdf/dftv_gpsedguide_sailboatdesign.pdf

A. Identify Desired Results

- 1. What are the content standards and 21st century skills that this lesson will teach?**

Ohio Academic Standards for Science

Earth and Space Science

The Atmosphere

The atmosphere is made up of air.

Physical Science

Changes in Motion

Forces change the motion of an object.

21st Century Skills

- Teamwork and collaboration
- Curiosity and imagination
- Innovation and creativity
- Critical thinking and problem solving
- Effective oral and written communication
- Accessing and analyzing data

- 2. What are the “big ideas”, key concepts, knowledge, and skills that describe what students will know and be able to do?**

- Students will understand how changes in one design variable affects the effectiveness of the design

- 3. What intriguing questions will elevate the students’ thinking, foster inquiry, and build conceptual understandings?**

- Can you make a design work better by making just one change in the design?
- What changes in the design of a sail car can make the car travel faster?

4. **What prior knowledge and skills do the students need to understand the content?**
 - What is a variable?
 - What do we mean by average in math?
 - How can we use a calculator to do an average of three numbers?
5. **What new knowledge will students acquire from these activities?**
 - Students will better understand how changing one variable in a design affects the design's performance
 - Students will learn how to calculate and graph the average time it takes an object to travel a set distance over several runs
6. **What should students be able to do as a result of these activities?**
 - Students will be able to improve a design's performance by changing one variable at a time and analyzing the results.
 - Students will be able to calculate and graph the average time an object takes to travel a set distance after repeated runs.

B. Determine Acceptable Evidence for Assessment

1. **What summative assessments will show what students have learned and can do at the end of the experience?**
 - Student designs will indicate their understanding of how changes in variables in a design will affect the efficiency of that design.
 - Student portfolios will contain drawings, discussions, and data showing their understanding of variables, design changes, and average time.
 - Students' graphs will indicate their understanding of average time and their ability to visually represent and explain average.
2. **What criteria are needed for the students to demonstrate understanding of the standards across different integrated content subjects?**

A rubric should reflect students' understanding that changing one variable can affect the outcome of the design. The rubric should also show students' ability to calculate and graph average. The rubric will also reflect the students' capacities to meet the 21st Century skills identified for this lesson.
3. **What formative assessments will be used to measure progress toward students' understanding and inform instruction?**

Studying student journals, having discussions with students during the project, and observations of student work will inform instruction
4. **How will students think about their ideas and assess their own progress?**

Students will have time to reflect on their ideas and progress in their journals and through formative discussion sessions with the teacher.

C. Plan Learning Experiences

1. Which STEM practices should students be engaged in?

Science, math, and engineering

2. How will the learning experiences be constructed to provide for relevance and real-world experiences for the students?

The procedure for this lesson is based upon using the engineering design process to help the teacher construct the lesson and to help the students think through the design process. A design process (using the Engineering Is Elementary© model) is included below.

Ask

- I. Tell students they are car designers who have been hired by a car company to find ways to make their sail car go as fast as possible.
- II. Divide class into teams of 2-3 students each.
- III. Have each team build an exact copy of the sail car (see photo and description below)

Materials and dimensions of the sail car components



- Styrofoam meat tray, 3" X 6" (supermarket)
- Wooden dowel rods, 3/16" X 5" (hardware store)

- Cardboard wheels, , 2” in diameter with 3/16” centers (science supply store)
- 4 pieces of plastic tubing for wheel spacers, ½” by 3/16” inner diameter (hardware or aquarium shop)
- Plastic straws to hold wooden axles, two 1-inch sections per axle. Use large straws so axle can turn freely inside straw sections.
- Craft stick for mast (cut a slit in the center of the tray)
- Cardboard or index card for sail, 4” X 4”
- Tape to hold straw axle holders to meat tray, sail to mast
- Fan to propel car
- 10 feet of linoleum floor or smooth surface to run car
- Stopwatch

- IV. Student teams should each run their cars 3 times and calculate the average time for their car.
- V. They write down each time, then use a calculator to determine the average time for the three runs. They then create a graph showing the times for each of the three runs and the average time, for a total of 4 graphs.

Imagine

- VI. Students then discuss what one change they could make to the car design that could affect the car’s speed.

Plan

- VII. The class would decide on the one variable (i.e., sail size) that could affect the car’s speed.
- VIII. Each team would select (or be assigned) a different size sail to make and test for their car.

Create

- IX. Each team would conduct and time three new runs for their car, writing down the times and making a graph of the three new times and the average of the three times.
- X. Students will then meet as a class and compare data. They should put their average time on a large class graph so all graphs can be compared easily. They should be able to determine the best sail size for the car. All students will change their sails to this size.

Improve

- XI. Students now determine in their own groups an additional variable they would like to change in their car (i.e., shape of sail, location of sail, added weight to car).
- XII. Each team reports to the class and the teacher what change they will make to their car’s design and explain why they think that change will

improve the car's time. **Be sure to check that each team is only changing one variable before they build and test their car.**

- XIII. Students modify and test their car three times, recording and graphing the three time results and the average time.
- XIV. Students meet again as a group and compare results.
- XV. Discussions would then take place to determine the best changes to recommend to the company for their sail car.
- XVI. As an extended lesson, students could make a drawing of their final car design with correct measurements indicated so another group could build their car if they needed to. This step would add authenticity to the lesson, as engineers must leave detailed instructions and drawings so others can understand and build their designs.
- XVII. As another extension, students could be allowed to make one more change in their design based upon information learned by the class tests and then have race-offs against other teams.

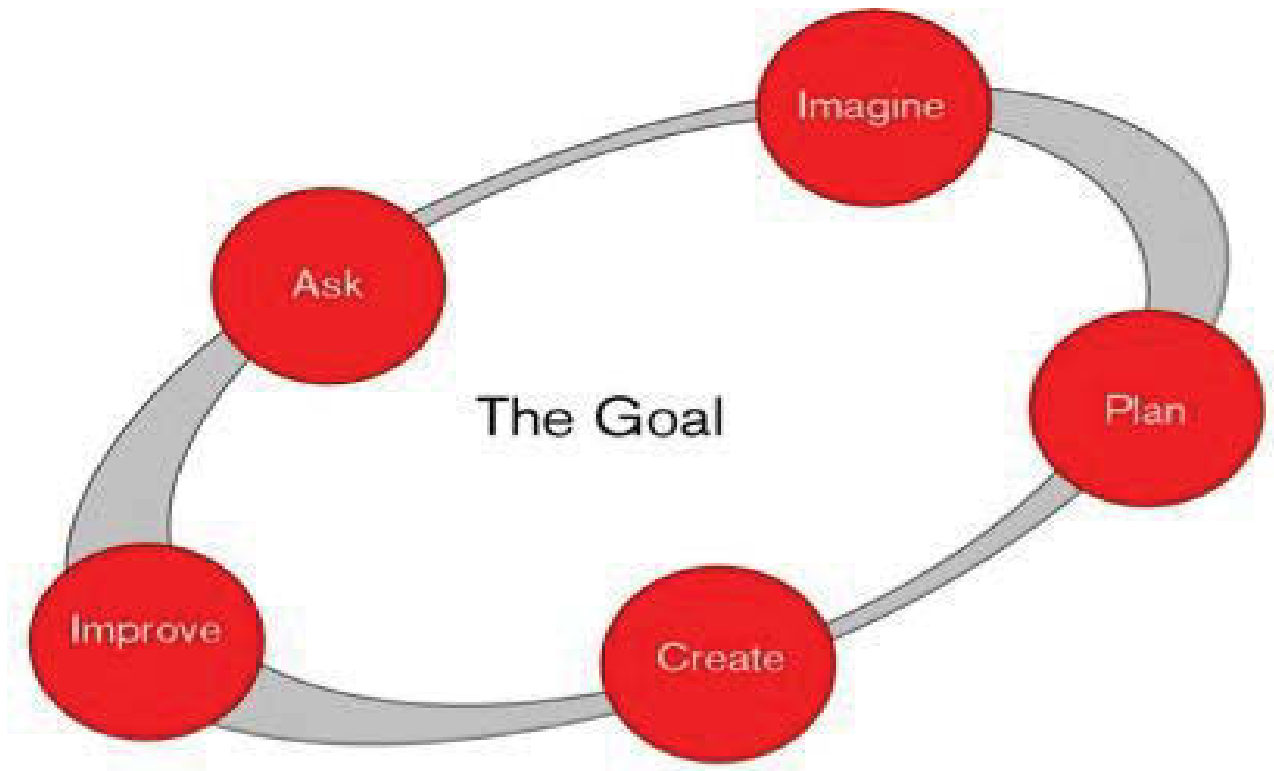
3. How can I tailor instruction to my students who may have special needs, interests, and abilities?

Students will be in mixed ability groups so individual students' strengths can be incorporated into the team. Students with special needs can be helped by team members and by simplifying the assignment (limiting the number of variables a student may change, having classmates help construct the student's design, help with calculating and graphing averages).

Roller Coaster Rubric

Category	3	2	1
Students recognize the atmosphere is made of air	Student clearly explains in two different ways (writing, in pictures or orally) that moving air is the force that propels the car.	Student recognizes that moving air propels the car, either in writing, pictures, or orally.	Student's pictures, writing or oral description does not indicate a clear understanding that moving air propels the car.
Student understands that forces change the motion of an object.	Student clearly explains in two different ways (writing, in pictures or orally) that moving air is the force that propels the car.	Student recognizes that moving air propels the car, either in writing, pictures, or orally.	Student's pictures, writing or oral description does not indicate a clear understanding that moving air propels the car.
Student data are accurate and neatly displayed	Student's data and graphs were very accurate, easily understood, and the student could correctly apply the graph's information to the design	Student's data and graphs were correct and legible, and the student could tell what the graph represented	The student's data or graphs were either not accurate, not legible or both. The student had difficulty interpreting the graph's information
Student changed one variable at a time.	Student changed one variable at a time in their design and was able to accurately justify why that change would help the car's time.	Student's design changes were done one variable at a time. Student gave a reason as to why they felt the change would help the car's time.	The student's design had more than one variable change at a time, or the student could not describe how the design created that change.
21 st Century skills	The student exhibited almost all the skills listed for the project through both his actions and his communications	The student exhibited many of the skills listed for the project through either his actions or his communications	The student exhibited few of the skills listed for this project, through either his actions or his communications

Engineering Elementary Design Process



Appendix B

SCHOOL - PARENT COMPACT

2014- 2015

The purpose of the SCHOOL-PARENT COMPACT, found in Section 1118 of Public Law 103-382, is to build and foster the development of a school-parent partnership to help all children achieve the State's high standards. **Responsibility for improved student achievement will be shared by parents, the child, and teachers.**

It is the school's responsibility to provide high-quality curriculum and instruction in a supportive and effective environment that enables [*sic*] the children to meet the State's student performance standards. Each parent is responsible for supporting their [*sic*] child's learning, such as monitoring attendance, homework completion, and television watching; volunteering in their [*sic*] child's classroom; and participating, as appropriate, in decisions relating to the education of their children and positive use of extracurricular time.

PARENT/GUARDIAN

Communication between teachers and parents is important. As a parent or adult who has responsibility for the child, I will attend at least one parent-teacher conference during which this compact will be discussed as it relates to my child's achievement. I will read each progress report and talk to my child about the progress report. I understand that I will have reasonable access to my child's teachers, opportunities to volunteer and participate in my child's class, and observe classroom activities.

I, _____ (Print), agree to Title I service for my child and that I will be responsible for supporting the learning of my child in the following

ways:

- | | |
|---|---|
| <input type="checkbox"/> Reading progress reports | <input type="checkbox"/> Discussing progress reports |
| <input type="checkbox"/> Observing in the classroom | <input type="checkbox"/> Volunteering in my child's class |
| <input type="checkbox"/> Helping my child analyze feelings
and establishing values | <input type="checkbox"/> Monitoring television time |
| <input type="checkbox"/> Verifying that homework is done | <input type="checkbox"/> Participating in conferences |
| <input type="checkbox"/> Establishing a place for studying | <input type="checkbox"/> Going on field trips |
| <input type="checkbox"/> Establishing a time for homework | |
| <input type="checkbox"/> Supporting the school in its efforts to maintain proper discipline | |
| <input type="checkbox"/> Seeing that my child is punctual and attends school regularly | |
| <input type="checkbox"/> Praising them for their progress and setting goals for improvement | |
| <input type="checkbox"/> Seeing that my child has a healthy breakfast before coming to school | |

Parent /Guardian Signature _____

Date _____

continued

CHILD/STUDENT

I, _____ (Print), agree that I will be responsible for improving my achievement in the following ways:

- | | |
|---|--|
| <input type="checkbox"/> Attending school regularly | <input type="checkbox"/> Asking questions |
| <input type="checkbox"/> Behaving well | <input type="checkbox"/> Completing homework |
| <input type="checkbox"/> Establishing a time for homework | <input type="checkbox"/> Listening in class |

- Preparing for class
- Studying assignments
- Abide [*sic*] by school rules and conduct
- Participating in class
- Going to bed early
- Coming to class with all the necessary tools

Student Signature _____

Date _____

STAFF/TEACHER

The school staff shares the responsibility for improved student achievement. I agree that I will be responsible in the following ways:

- Providing a high quality curriculum that enables the child to meet state performance standards
- Notifying parents of changes affecting attendance, achievement, grades or behavior
- Increasing communication between the parents and teachers
- Participating in conferences
- Reporting children's progress
- Utilizing parent volunteers
- Being available to staff and parents
- Encouraging all students
- Providing structured and clear limits for learning

Teacher Signature _____

Date _____

Message from the Principal

I support this form of parent involvement. Therefore, I shall strive to do the following:

- Provide an environment that allows for positive communication between the teacher, parent, and student.
- Provide opportunities to be involved in the school and in their child's [sic] education.
- Encourage positive communication between home and school.
- Encourage teachers to provide homework assignments that reinforce classroom instruction

Appendix C

3302.10 Academic distress commission for districts in academic emergency.

(A) The superintendent of public instruction shall establish an academic distress commission for each school district that meets any combination of the following conditions for three or more consecutive years:

- (1) The district has been declared to be in a state of academic emergency under section 3302.03 of the Revised Code, as that section existed prior to March 22, 2013, and has failed to make adequate yearly progress;
- (2) The district has received a grade of "F" for the performance index score and a grade of "D" or "F" for the value-added progress dimension under division (A) or (B) of section 3302.03 of the Revised Code;
- (3) The district has received an overall grade of "F" under division (C)(2) of section 3302.03 of the Revised Code

Each commission shall assist the district for which it was established in improving the district's academic performance.

Each commission is a body both corporate and politic, constituting an agency and instrumentality of the state and performing essential governmental functions of the state. A commission shall be known as the "academic distress commission for (name of school district)," and, in that name, may exercise all authority vested in such a commission by this section. A separate commission shall be established for each school district to which this division applies.

(B) Each academic distress commission shall consist of five voting members, three of whom shall be appointed by the superintendent of public instruction and two of whom shall be residents of the applicable school district appointed by the president of the district board of education. When a school district becomes subject to this section, the superintendent of public instruction shall provide written notification of that fact to the district board of education and shall request the president of the district board to submit to the

superintendent of public instruction, in writing, the names of the president's appointees to the commission. The superintendent of public instruction and the president of the district board shall make appointments to the commission within thirty days after the district is notified that it is subject to this section.

Members of the commission shall serve at the pleasure of their appointing authority during the life of the commission. In the event of the death, resignation, incapacity, removal, or ineligibility to serve of a member, the appointing authority shall appoint a successor within fifteen days after the vacancy occurs. Members shall serve without compensation, but shall be paid by the commission their necessary and actual expenses incurred while engaged in the business of the commission.

(C) Immediately after appointment of the initial members of an academic distress commission, the superintendent of public instruction shall call the first meeting of the commission and shall cause written notice of the time, date, and place of that meeting to be given to each member of the commission at least forty-eight hours in advance of the meeting. The first meeting shall include an overview of the commission's roles and responsibilities, the requirements of section 2921.42 and Chapter 102. of the Revised Code as they pertain to commission members, the requirements of section 121.22 of the Revised Code, and the provisions of division (F) of this section. At its first meeting, the commission shall adopt temporary bylaws in accordance with division (D) of this section to govern its operations until the adoption of permanent bylaws.

The superintendent of public instruction shall designate a chairperson for the commission from among the members appointed by the superintendent. The chairperson shall call and conduct meetings, set meeting agendas, and serve as a liaison between the commission and the district board of education. The chairperson also shall appoint a secretary, who shall not be a member of the commission.

The department of education shall provide administrative support for the commission, provide data requested by the commission, and inform the commission of available state resources that could assist the commission in its work.

(D) Each academic distress commission may adopt and alter bylaws and rules, which shall not be subject to section 111.15 or Chapter 119. of the Revised Code, for the conduct of its

affairs and for the manner, subject to this section, in which its powers and functions shall be exercised and embodied.

(E) Three members of an academic distress commission constitute a quorum of the commission. The affirmative vote of three members of the commission is necessary for any action taken by vote of the commission. No vacancy in the membership of the commission shall impair the rights of a quorum by such vote to exercise all the rights and perform all the duties of the commission. Members of the commission are not disqualified from voting by reason of the functions of any other office they hold and are not disqualified from exercising the functions of the other office with respect to the school district, its officers, or the commission.

(F) The members of an academic distress commission, the superintendent of public instruction, and any person authorized to act on behalf of or assist them shall not be personally liable or subject to any suit, judgment, or claim for damages resulting from the exercise of or failure to exercise the powers, duties, and functions granted to them in regard to their functioning under this section, but the commission, superintendent of public instruction, and such other persons shall be subject to mandamus proceedings to compel performance of their duties under this section.

(G) Each member of an academic distress commission shall file the statement described in section 102.02 of the Revised Code with the Ohio ethics commission. The statement shall be confidential, subject to review, as described in division (B) of that section.

(H) Meetings of each academic distress commission shall be subject to section 121.22 of the Revised Code.

(I)

(1) Within one hundred twenty days after the first meeting of an academic distress commission, the commission shall adopt an academic recovery plan to improve academic performance in the school district. The plan shall address academic problems at both the district and school levels. The plan shall include the following:

(a) Short-term and long-term actions to be taken to improve the district's academic performance, including any actions required by section 3302.04 or 3302.041 of the Revised Code;

- (b) The sequence and timing of the actions described in division (I)(1)(a) of this section and the persons responsible for implementing the actions;
 - (c) Resources that will be applied toward improvement efforts;
 - (d) Procedures for monitoring and evaluating improvement efforts;
 - (e) Requirements for reporting to the commission and the district board of education on the status of improvement efforts.
- (2) The commission may amend the academic recovery plan subsequent to adoption. The commission shall update the plan at least annually.
- (3) The commission shall submit the academic recovery plan it adopts or updates to the superintendent of public instruction for approval immediately following its adoption or updating. The superintendent shall evaluate the plan and either approve or disapprove it within thirty days after its submission. If the plan is disapproved, the superintendent shall recommend modifications that will render it acceptable. No academic distress commission shall implement an academic recovery plan unless the superintendent has approved it.
- (4) County, state, and school district officers and employees shall assist the commission diligently and promptly in the implementation of the academic recovery plan.
- (J) Each academic distress commission shall seek input from the district board of education regarding ways to improve the district's academic performance, but any decision of the commission related to any authority granted to the commission under this section shall be final.

The commission may do any of the following:

- (1) Appoint school building administrators and reassign administrative personnel;
- (2) Terminate the contracts of administrators or administrative personnel. The commission shall not be required to comply with section 3319.16 of the Revised Code with respect to any contract terminated under this division.
- (3) Contract with a private entity to perform school or district management functions;
- (4) Establish a budget for the district and approve district appropriations and expenditures, unless a financial planning and supervision commission has been established for the district pursuant to section 3316.05 of the Revised Code.

(K) If the board of education of a district for which an academic distress commission has been established under this section renews any collective bargaining agreement under Chapter 4117. of the Revised Code during the existence of the commission, the district board shall not enter into any agreement that would render any decision of the commission unenforceable. Section 3302.08 of the Revised Code does not apply to this division.

Notwithstanding any provision to the contrary in Chapter 4117. of the Revised Code, if the board of education has entered into a collective bargaining agreement after September 29, 2005, that contains stipulations relinquishing one or more of the rights or responsibilities listed in division (C) of section 4117.08 of the Revised Code, those stipulations are not enforceable and the district board shall resume holding those rights or responsibilities as if it had not relinquished them in that agreement until such time as both the academic distress commission ceases to exist and the district board agrees to relinquish those rights or responsibilities in a new collective bargaining agreement. The provisions of this paragraph apply to a collective bargaining agreement entered into after September 29, 2005, and those provisions are deemed to be part of that agreement regardless of whether the district satisfied the conditions prescribed in division (A) of this section at the time the district entered into that agreement.

(L) An academic distress commission shall cease to exist when the district for which it was established receives a performance rating of in need of continuous improvement or better, under section 3302.03 of the Revised Code as that section existed prior to March 22, 2013, or a grade of "C" or better for both the performance index score under division (A)(1)(b), (B)(1)(b), or (C)(1)(b) and the value-added progress dimension under division (A)(1)(e), (B)(1)(e), or (C)(1)(e) of section 3302.03 of the Revised Code for two of the three prior school years; however, the superintendent of public instruction may dissolve the commission earlier if the superintendent determines that the district can perform adequately without the supervision of the commission. Upon termination of the commission, the department of education shall compile a final report of the commission's activities to assist other academic distress commissions in the conduct of their functions.

Amended by 130th General Assembly File No. TBD, HB 487, §1, eff. 9/17/2014.

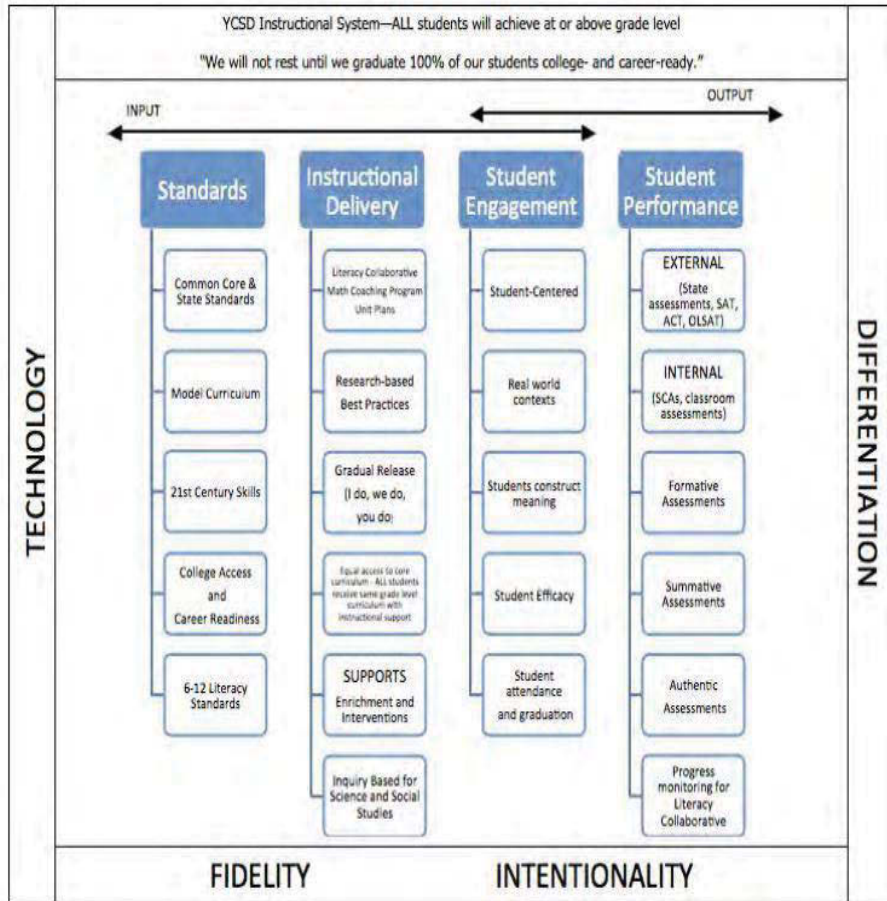
Amended by 129th General Assembly File No.184, HB 555, §1, eff. 3/22/2013.

Effective Date: 09-29-2005; 2007 HB119 09-29-2007; 2008 HB420 12-30-2008

Appendix D

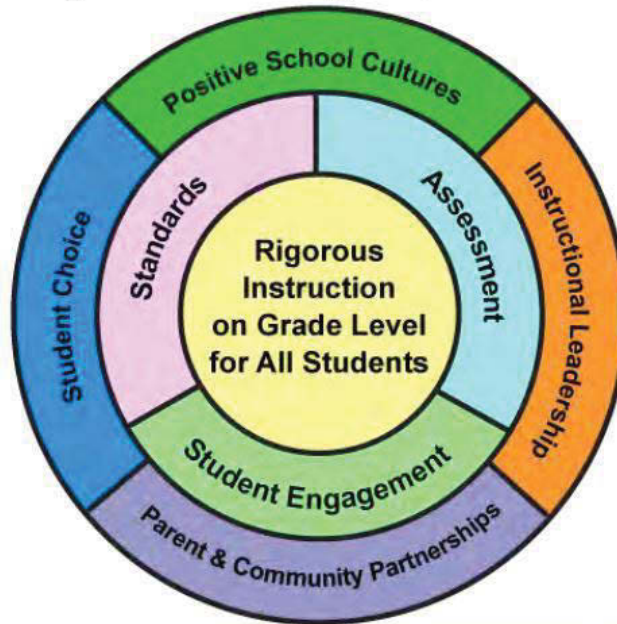
Appendix D - District Instructional Framework

Appendix F: YCSD Instructional Framework



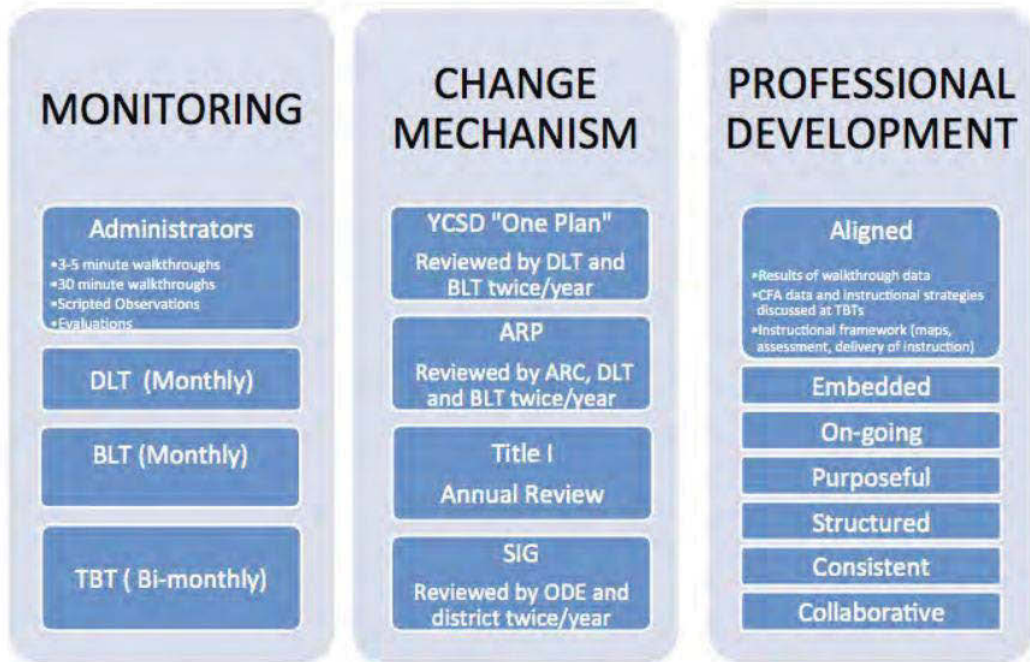
"We will not rest until we graduate 100% of our students college- and career-ready."

Building a Culture of High Expectations for All



YOUNGSTOWN CITY SCHOOLS

YCSO Instructional System—ALL students will achieve at or above grade level
"We will not rest until we graduate 100% of our students college- and career-ready."



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Appendix E

Appendix E: Descriptive of Reading, Math, and Science Scale Scores

Table 1. *Descriptive OAA Reading Scale Score*

Status	Disability	Race	Pre - Mean	Post - Mean
Control	no	Black	401.38	399.65
		Hispanic	397.76	404.72
		Mixed	421.4	407.62
		White	402.75	405.15
	yes	Black	379.81	395.7
		Hispanic	375	396.5
		Mixed	361	388.14
		White	398.5	396.8
Discovery (Treat)	no	Black	392.06	407.56
		Hispanic	381	407.44
		Mixed		412.13
		White	432	420.64
	yes	Black	383.8	402.8
		Hispanic	407.5	383.5
		Mixed	390.5	398
		White	358	426

Table 2. *Descriptive OAA Math Scale Score*

Status	Disability	Race	Pre - Mean	Post - Mean
Control	no	Black	402.26	392.8
		Hispanic	410.83	401.79
		Mixed	416.5	396.19
		White	419.13	394.95
	yes	Black	373.88	388.8
		Hispanic	385.33	388.6
		Mixed	347	381
		White	401.79	393.96
Discovery (Treat)	no	Black	394.56	405.24
		Hispanic	382.5	419.22
		Mixed		403.13
		White	444	420.86
	yes	Black	395.2	397.6
		Hispanic	401.5	412.5
		Mixed	397	400
		White	367	403.5

Table 3. *Descriptive OAA Science Scale Score*

Status	Disability	Race	Pre - Mean	Post - Mean
Control	no	Black	394.06	383.24
		Hispanic	398.9	382.87
		Mixed	409.6	383.59
		White	402.46	382.35
	yes	Black	374.69	381.2
		Hispanic	375	385.25
		Mixed	360	369.71
		White	398.14	380
Discovery (Treat)	no	Black	382.56	396.54
		Hispanic	390	393.78
		Mixed		399.25
		White	461	405.64
	yes	Black	389	396.4
		Hispanic	388.5	404
		Mixed	384	411
		White	381	417.75

Appendix F

Youngstown

STATE UNIVERSITY

One University Plaza, Youngstown, Ohio 44555

Office of Grants and Sponsored Programs

330.941.2377

Fax 330.941.2705

April 10, 2014

Dr. Karen Larwin, Principal Investigator
Mr. Doug Hiscox, Co-investigator
Department of Educational Foundations, Research, Technology and Leadership
UNIVERSITY

RE: HSRC Protocol Number: 148-2014
Title: Impact of Choice on Student Achievement in Youngstown City Schools

Dear Larwin and Mr. Hiscox:

The Institutional Review Board has reviewed the abovementioned protocol and determined that it is exempt from full committee review based on a DHHS Category 5 exemption.

Any changes in your research activity should be promptly reported to the Institutional Review Board and may not be initiated without IRB approval except where necessary to eliminate hazard to human subjects. Any unanticipated problems involving risks to subjects should also be promptly reported to the IRB.

The IRB would like to extend its best wishes to you in the conduct of this study.

Sincerely,



Dr. Scott Martin
Interim Associate Dean for Research
Authorized Institutional Official

SCM/cc

c: Dr. Lenford Sutton, Chair
Department of Educational Foundations, Research, Technology and Leadership



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