Rigorous and Relevant Instruction 1

A STUDY OF THE BENEFITS OF TEACHING WITH RIGOROUS AND RELEVANT INSTRUCTION

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ABSTRACT

This study’s purpose was to determine if there are benefits to Daggett’s theory of instruction called Rigor and Relevance. The research findings answer the research question, “Is there a difference in student achievement between students who receive rigorous and relevant instruction and students who do not receive rigorous and relevant instruction?” The research was conducted in two fourth grade classrooms at one elementary school by analyzing the Missouri Assessment Program (MAP) scores in English Language Arts. The results were analyzed by conducting a t-test through A Statistical Program (ASP) and through Microsoft Excel. The results indicated that the use of Rigorous and Relevant instructions has a positive effect on student achievement. There is more instruction needed on the concept of Rigor and relevance for teachers to accurately and fully implement this practice.
INTRODUCTION

Background, issues and concerns.

With the upcoming implementation of Smarter Balanced assessments, “Smarter Balanced is a state-led consortium working collaboratively to develop next-generation assessments aligned to the Common Core State Standards (CCSS) that accurately measure student progress toward college and career readiness.” (Smarter Balanced Consortium, 2012). there are concerns about the increase in difficulty they present, and how students will perform. Many researchers feel that making instruction that is more rigorous will be necessary to prepare students for these assessments. Some may wonder, if along with rigor, making instruction relevant will improve test scores.

Practice under investigation.

The practice under investigation will be looking at performance scores of students who have received Rigorous and instruction (R&R) vs. students who have not received that type of instruction.

School policy to be informed by study.

NKCSND has designed an initiative to implement rigorous and relevant instruction in elementary classrooms. Schools have received staff development in order to effectively teach using rigor and relevance.

Conceptual underpinning.

The theoretical basis behind Rigor and Relevance focuses on doing away with traditional methods of teaching in order to compete with other countries’ education systems. Providing students with opportunities to learn with real world applications, in many cases in unpredictable situations in which to apply their learning is emphasized. Rigor and Relevance comprises
learning in to four quadrants, A-D, and encourages many learning opportunities in quadrant D, adaptation. In quadrant D students are analyzing, synthesizing, and evaluating while applying their knowledge to real world predictable and unpredictable situations. To be instructing in Quadrant D, it is important use cross-curricular instruction. In this quadrant, students are not watching their teacher work like in traditional methods, students are thinking and working. Technology and innovation are strong components to this theory as they are part of the real world that students need to be prepared for.

A suburban mid-western school district promotes Rigorous and Relevant instruction to support their mission and emphasis on technology.

“The district mission statement is “NKCS will establish successful learning experiences for all and create responsible citizens capable of lifelong accomplishments.” This is well served through cutting edge technology, well-trained staff, integrated curriculum and a technology plan that incorporates both internal and external constituents from concept to implementation”. In addition to technology, NKCS has placed a focus on career readiness in their strategic plan. This is supported by the theory of Rigor and Relevance.

**Statement of the problem.**

If there is a direct relationship between teaching with R&R and higher test scores, then teachers need will need to implement instruction that will increase student achievement.

**Purpose of the study.**

The purpose of the proposed study is to determine if the use of rigorous and relevant instruction will increase student achievement.
Research questions.

RQ#1: Is there a difference in student achievement between students who receive rigorous and relevant instruction and students who do not receive rigorous and relevant instruction?

Null hypothesis.

There is no difference in student achievement between students who receive rigorous and relevant instruction and students who do not receive rigorous and relevant instruction.

Anticipated benefits of the study.

The anticipated benefits of the proposed study are higher student achievement and student engagement. Students will use higher level thinking strategies and gain a deeper understanding of each skill that was taught.

Definition of terms.

MAP- Missouri Assessment Program

R&R- Rigorous, extremely thorough, exhaustive, or accurate relevant- closely connected or appropriate to the matter at hand

Summary.

A study was conducted to see if there was a significant difference in student achievement scores in classrooms that implemented R&R instruction, and those who taught with more traditional methods. After this study is completed, school districts can use this information to influence their decision to implement R&R instruction.
REVIEW OF LITERATURE

The changing nature of work, technology, and competition in the global job market has far outpaced what the U.S. education system provides for students. (Daggett, 2008) Studies have shown that students understand and retain knowledge best when they have applied it in a practical, relevant setting. A teacher who relies on lecturing does not provide students with optimal learning opportunities. Instead, students go to school to watch the teacher work. All educators can use the Rigor/Relevance Framework to set their own standards of excellence as well as to plan the objectives they wish to achieve. This versatile Framework applies to standards, curriculum, instruction, and assessment. (Daggett, 2008)

The International Center for Leadership in Education has been researching and working with schools around the country from kindergarten to 12th grade. They institute believes that in order to keep up with the changes in our society, school’s foundation needs to be on teaching with rigor, relevance, and emphasizing the importance of relationships. They emphasize the importance of cross curricular learning not only in core subjects, but also across music, P.E., art, and counselor sessions. The reason change is needed is to ensure students are able to become successful in the real world. (Daggett, 2008).

Brain research conducted throughout several studies found that in addition to creating a safe and creative culture in the classroom and providing opportunities for physical activity, engaging students in rigorous and relevant instruct will have a positive impact on the brain. “the impact on brain health, given the evidence for brain plasticity and the related characteristics of neurogenesis and synaptic density, is positive. The more that is learned about the phenomenon of brain health, the greater the potential benefit will be to education. Equally as important, the more
that is learned about education and its relationship to brain function, the greater the impact the
education system can have on brain health. (Daggett, 2007).

Best practices for teaching under the umbrella of Rigor and Relevance should allow teaching to
connect directly to students’ lives. In order to be college and career ready, students need to be
given the opportunity to use higher-level thinking skills. “Such as how to analyze an argument,
weigh evidence, recognize bias (their own and others’ bias), distinguish fact from opinion,
balance competing principles, work collaboratively with others, and be able to communicate
clearly what they understand (Wagner, 2006) Also included in Rigorous and Relevant instruction
is real-world application. When students are able to have real world applications their learning
becomes more authentic and helps them to connect with their communities. “Students construct
meaning and produce knowledge, students use disciplined inquiry to construct meaning, and
students aim their work toward production of discourse, products, and performances that have
value or meaning beyond success in school” (Archbald & Newman, 1988). In order to teach
with rigor, collaboration among peers in order to create a project is important. Students projects
could include taking real-world problems and applying their knowledge along with their peers to
solve them.

In “Blending Rigor and Relevance” A collaborative at several sites across the state of
California will offer evidence of how successful linked learning, which connects academics to
real-world work, can be. This article presents examples that illustrate the powerful connections
and linkages that are generated by combining academic rigor with the relevance of applying
learning to real-world work and careers. The connection is compelling not only to students, but
to teachers, industry, and funders as well. The article also presents highlights that describe
challenges, successes, and lessons learned from the work of the Alliance for Regional
Collaboration to Heighten Educational Success (a statewide organization) with six regional collaboratives as they plan and implement linked learning approaches in specific school sites, with the support of the Irvine Foundation. Siri D, Zinner J, & Lezin N.(2011).
RESEARCH METHODS

Research design.

A study was conducted to see if there was a difference in student achievement with the use of rigorous and relevant instruction. The independent variable being tested was the type of instruction while the dependent variable was the raw scores taken from the 2013 MAP test in English language arts.

Study group description.

The study group consisted of 50 4th grade students and 2 classroom teachers. 25 of the 4th grade students and 1 classroom teacher used R&R while the other 25 students and classroom teacher did not use R&R instruction. The free and reduced lunch population of both classrooms is %60. The English language learner population is %18.

Data collection and instrumentation.

The English Language Arts MAP scores was collected from two fourth grade classrooms. The raw score was examined from each classroom.

Statistical Analysis Methods

A t-test was used to complete the statistical calculations in this study. Descriptive statistics were calculated. Additionally, Microsoft Excel was used to formulate and compile some totals in this research.
FINDINGS

A t-test was conducted to determine if rigorous and relevant instructional methods have a positive effect on student achievement. The findings are depicted in the charts, graphs, and tables below. The data used was taken from MAP test results from 2013.

Figure 1

t-Test Analysis Results for 2009 Female and Male Communication Arts EOC scores

<table>
<thead>
<tr>
<th>Source</th>
<th>Mean</th>
<th>Mean D</th>
<th>t-Test</th>
<th>df</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class 1</td>
<td>662.36</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class 2</td>
<td>580.573</td>
<td>22.32</td>
<td>3.08</td>
<td>47</td>
<td>.003</td>
</tr>
</tbody>
</table>

Note: Significant when p<=0.25

Two classrooms were used to collect 2013 MAP English language arts data, class x was a classroom and class y is data from another 4th grade classroom from the same building. The raw points each student received were used for the t-test. The Mean of class X is 662.36 and the mean of class y is 640.02. The mean D, or the difference between group X and y is 22.31 points. The t-test result was 3.08 and the D.F. was 47. The null hypothesis states that students who receive rigorous and relevant instruction will not have increased student achievement. This null hypothesis was rejected because the p-value, 0.003, is lower than the alpha level, .25. This shows that rigorous and relevant instruction does have a significant effect on student achievement in a positive way.
CONCLUSIONS AND RECOMMENDATIONS

The Null Hypothesis stated there is no difference in student achievement between students who receive rigorous and relevant instruction and students who do not receive rigorous and relevant instruction. The results of this study indicate that there is a difference between regular instruction and rigorous and relevant instruction. Many teachers are intimidated by this new method of teaching for several reasons. One challenge is that this is not the way teachers were educated therefore it is a challenge to implement this new kind of instruction. An additional obstacle is it is new and many teachers who are expected to teach this way have received minimal training and resources. Unfortunately, our nation’s testing has not caught up to this method of assessment and assessing students the traditional way is a challenge when teachers are instructing their students using Rigorous and Relevant instruction.

The NKCSD may want to consider further training on Rigorous and Relevant Instruction. There is also a need to update the district’s current units of study to allow more opportunities for cross curricular and quadrant D instruction. The way the balanced literacy model is currently implemented at NKCSD is not fully conducive to Rigorous and Relevant instruction. Allowing a little flexibility on the way Reader and Writer’s workshop is set up could allow teachers to provide more rigorous learning experiences. In addition to further training and flexibility in the Balanced Literacy model, NKCSD needs to provide collaboration time and additional resources for teachers. Without access to quality quadrant D lessons, many teachers feel they cannot create those experiences for their students.
With some additional district support and modifications teachers would be able to successfully implement Rigorous and Relevant instruction. The benefits of this instruction in one classroom indicate proven results of this type of instruction.
REFERENCES


