

Independent Research & Analysis
A Survey of School Districts Profiled in
Pearson Scott Foresman Publishers’
January 2007 Publication,

*"Investigations in Number, Data, and Space: Evidence for Success"*ⁱ

(Originally prepared February 24th, 2009; Data updated March 7, 2009)

List of Document Changes – Change Date

February 24, 2009

March 7, 2009

Change Description

Original Document

Updated Sheridan School District AR and Falcon School District CO – **both**
have dropped Math Investigations

Survey Purpose and Methodology

The purpose of this survey was to examine claims of success regarding districts and schools utilizing Pearson Publishers' elementary mathematics curriculum, *Investigations in Number, Data, and Space* as profiled in the publisher's marketing / validation study. The survey was prepared in support of a review of elementary mathematics text/materials presented to the Prince William County School Board, Prince William County Public Schools (PWCS), Virginia, February, 2009.

In considering the adoption of the *Investigations* elementary math curriculum, school districts regularly cite the Pearson document as "research" to support school system selection of the materials. Each of the school and district "data cases" presented in the Pearson document are said to represent, "*Cross sectional information about the schools and districts included.*"ⁱⁱ The Pearson document further asserts, "*The data, taken as a whole, document the success of this Scott Foresman instructional material across a wide range of situations, including differing student body compositions (socioeconomic and ethnic), and urban, suburban and rural locales,*" and finally, "*In designing this study, the aim was to provide the kind of information that schools and districts already use to support their curriculum decisions.*"ⁱⁱⁱ

Data within the Pearson document is presented in series of rising colored bar graphs – with disparate "percentage score" scales and no correlation of school or district performance to other schools within a district, districts within a state, or states within the nation on given state or national standardized mathematics achievement tests. As such it provides a visually appealing presentation of information that, without further scrutiny, suggests that the adoption of *Investigations* leads to increased student learning and achievement in the discipline of mathematics. However, the data provide no correlation to the relative performance and achievement of the schools and districts when compared to others within a given district, or other districts within a given county or state. As such, no barometer of actual mathematical achievement is presented and false conclusions regarding the efficacy of the curricula may easily be drawn. When the mathematics achievement data from respective state Department of Education websites is examined in the context of Pearson success story school/district achievement claims, one finds that relative to other schools/districts in the same state on many of the Pearson "*documented successes*" are schools and districts whose mathematical achievement remains below district, county, and state averages – often after several years of *Investigations* implementation.

One such "*success story*" cited in the Pearson document is Greece Central School District, New York. Greece CSD implemented the *Investigations* curriculum in 2000. Greece CSD numerical scores on NY State Department of Education standardized tests did indeed rise after the implementation. However, relative to the other 18 school districts in suburban Rochester, Monroe County New York, Greece CSD's *mathematical achievement* on statewide testing under *Investigations* plummeted to the bottom for all grade levels tested 3rd through 8th grade by 2006. Performance through 2008 remained dismal relative to the other 18 suburban Rochester NY districts in Monroe county.^{iv} **Despite similar such cases, school districts considering the adoption and purchase of the *Investigations* curricula are disinclined to look at the broader context of achievement – satisfied instead with the presentation of rising bar graphs in the Pearson marketing materials.**

Survey Purpose and Methodology (Continued)

Though lauded as “*success stories*” in the January 2007 Pearson publication, many of the included schools, districts, and in fact state Departments of Education have rejected *Investigations* outright and have long since ceased using the curricula and materials. Many others are in the process of removing the curricula and materials from primary/basal use in mathematics instruction in their districts. The following is a compilation of findings from contact made with those schools, districts, and state level agencies associated with the schools and districts cited as *Math Investigations success stories* in the January 2007 edition of the Pearson Scott Foresman “*Evidence for Success*” publication. The data were compiled from January through February 2009 in support of a review of elementary mathematics text/materials presented to the Prince William County School Board, Prince William County Public Schools (PWCS), Virginia. The data are presented in two parts. Part I includes a Summary of Findings and tabular data reflecting the current status of *Investigations* curricula use in each district responding. Part II is a summary of selected remarks from School District Math Curriculum Directors and Coordinators on Math Investigations contacted in support of this survey.

The information presented puts the Pearson Scott Foresman “*Success Stories*” in a larger achievement-oriented perspective in light of the high numbers of districts no longer using or in the process of abandoning *Investigations in Number, Data, and Space* in districts and states across the country. In the spirit of a “Caveat Emptor” (*buyer beware*) concern for districts and schools considering adoption of this mathematics curriculum, the authors of this survey remain optimistic that these such agencies will have the foresight to look beyond the glossy publisher sales brochures when considering the mathematical content that should be provided in instructional programs to the children in public school systems.

When considering an elementary mathematics program for adoption in public school systems, the authors of this survey firmly believe that consideration of mathematical content must be a priority over the pedagogical ideology that serves as the foundation for the *Investigations* curriculum.^v In selecting *Investigations* evidence suggests that the program is rich in ideology and weak in content and alignment to state standards. The commentary of several interviewed school officials provided in Part II below speaks volumes.

Part I – Summary of Findings

A majority of districts reporting have either discontinued using the *Investigations* curriculum and materials or are in the process of dropping the program as of February, 2009.

- 64 of 70 “*Evidence for Success*” school districts responded to the survey
- 38 of these districts have **discontinued use or are in the process of discontinuing the use of *Investigations*** (59% of districts responding; 54% of districts overall)
- 17 of these districts currently using *Investigations* are Title I (schools/districts) and/or receiving National Science Foundation funding and/or other grants for continued implementation of the curricula (27% of districts responding; 24% of districts overall)
- 8 of the districts using *Investigations* are using supplemental material to support gaps in the mathematical content of the program. (7 of these districts are comprised of 7 elementary schools or less; the 8th has only 15 elementary schools)
- Only two district responding were using *Investigations* without supplementation (3.2% of districts responding; 2.9% of districts overall)
- To date (7 Mar 2009) 6 districts had yet to respond; 4 of these are Title I districts)

Part I – Table of Survey Results and Contact Sources

| Pearson Cited Districts/School(s) | Status of Math Investigations Curriculum in Use? | Survey Response Agency |
|--|---|--|
| Vestavia Hills West Elem School, AL | DROPPED | District Curriculum & Instructional Specialist |
| Cartwright Elementary District 83, AZ | Using with supplementation Text Book Review Underway | District Math Dept. Director 16 elem. schools (Title 1s) |
| Hot Springs, AR | Using as Supplement Only | Math Dept. Coordinator Note: 4 elem schools (all Title I's) Math coach at each building |
| Wynne School District 9, AR | Awaiting Response | Awaiting Response |
| Adams-Arapahoe District 28J, CO | Awaiting Response | Awaiting Response |
| Falcon School District 49, CO | DROPPED | Elementary Specialist (Note: District has 3 elementary schools; all Title I) |
| Sheridan District, AR | DROPPED | 4 th Grade Teacher; (Note: District has 2 elementary schools; both Title I) |
| Naperville CUSD 203, IL | DROPPING | Gifted Coordinator and Math Project Manager (Note: 5-7 Title I elem schools out of 14) |
| Louisville Area, KY Jefferson County District (only 2 schools of 90 district schools cited: Portland & Luhr) | Using \$25 Million G.E. Grant - full implementation as of this year (urban district - numerous Title I's) for 90 elem schools | Math Specialist Portland School ranked 579 of 675; Luhr School ranked 612 of 675 KY elementary schools |
| Richard J. Murphy School, Boston School District, MA (1 elem school) | Using with supplementation | Math Coach Director Note: 1 elem school (Title I) ; (note this is only 1 of 89 Boston City elem schools which also have full Investigations implementation & accompanying National Science Foundation Grants for implementation) |

Part I – Table of Survey Results and Contact Sources (Continued)

| Cited Districts/School(s) | Status of Math Investigations Curriculum in Use? | Survey Response Agency |
|--------------------------------------|---|--|
| Cambridge Public School District, MA | Using with supplementation (Grant for math coaches & continuous support from TERC) | Math Director Note: 10 Title I Elem Schools out of 12 (<i>math coach at every school</i>) Actual Avg Class Size = 12 to 14 students |
| Concord Public School District, MA | Using with supplementation | Administrative Assistant to Director of Teaching & Learning 3 elementary schools (all Title I) Actual average Class Size = 20 |
| Framingham School District, MA | DROPPED | Director of Curriculum and Staff Development |
| Anoka-Hennepin ISD 11, MN | DROPPING | District Main Office/abcnews.com Note: 28 elem schools in district |
| Inver Grove District 199, MN | DROPPED | Math Lead & Vertical Team Member Note: 3 elem schools (all Title I schools) |
| Little Falls ISD 482, MN | DROPPING | Curriculum Director |
| Staples-Motley ISD 2170, MN | DROPPED | Curriculum Coordinator Note: 2 elementary schools (both Title I schools) |
| Stillwater District 834, MN | DROPPED | Curriculum Math Specialist |
| Waconia District 110, MN | DROPPED | Director of Teaching & Learning Note: 2 elementary schools (both Title I schools) |
| White Bear Lake 624, MN | Text Book Review Underway (may drop – confirm in late 3/09) Grant MSP (Math Science Partnership) funds now depleted | Curriculum Specialist Note: 3 Title I elem schools out of 9 elementary schools in district |
| Columbia District 93, MO | DROPPED | Curriculum Director |

Part I – Table of Survey Results and Contact Sources (Continued)

| Cited Districts/School(s) | Status of Math Investigations Curriculum in Use? | Survey Response Agency |
|--------------------------------------|---|---|
| Independence School District 3, MO | Using with supplementation | Principal, Blackburn Elem Note: 16 Title I elem schools out of 17 |
| Park Hill School District, MO | Using | Math Coordinator Note: 6 Title I elem schools out of 9 elementary schools in district |
| Sedalia School District 200, MO | Using with supplementation; only using Investigations K-4; traditional mathematics texts all grade 5-12 classrooms | Curriculum Director Note: 5 elem schools (all Title I schools) |
| Gadsden ISD, NM | Using with supplementation - Grant to support cont'd use of MI pedagogy | Director for Instructional Support Note: 14 elem schools (all Title I schools) |
| Brighton Central School District, NY | Using with supplementation | Note: only one K-2 & one 3-5 elementary school in district (21-22 students per class) |
| Buffalo City School District, NY | Using with supplementation – National Science Foundation continuous Funding | District Math Support Teacher Note: 45 elementary schools (89% Title I's) |
| Fairport Central, NY | DROPPED | Secretary to Principal Note: 3 elem schools in district |
| Fayetteville-Manlius Central, NY | Using with extensive supplementation | Math Lab Specialist Note: 3 elem schools (with 2 math coordinators) |
| Greece, Central, NY | DROPPING | Greece Central School District Main Office |
| Penfield Central, NY | DROPPED AS CORE PROGRAM | Director of Content Curriculum |
| Pittsford Central, NY | DROPPED AS CORE PROGRAM | Note: 5 elementary schools (total elem student pop = 456) |
| Rochester City School District, NY | Awaiting Response | Note: 71% free +reduced lunch Note: 39 elem schools |

Part I – Table of Survey Results and Contact Sources (Continued)

| Cited Districts/School(s) | Status of Math Investigations Curriculum in Use? | Survey Response Agency |
|--------------------------------------|--|--|
| Rush Henrietta Central, NY | Using with supplementation – National Science Foundation Grant | Director of Math Note: 3 Title I elem schools out of 5 total elementary schools |
| Syracuse City School District, NY | DROPPED | Math Coordinator National Science Foundation Funded/Syracuse U when adopted Note: 23 elem schools (75% Title I schools) |
| Douglas County School District, NV | Balanced (Investigations/Traditional = 50/50 –teachers’ discretion but must follow stringent pacing guides w/minimum of 3 MI units per year). | Director of Curriculum Note: 3 Title I elem schools of 7 schools in district |
| Buncombe County, NC | Using Grant to fully support Continued use | Math Curriculum Coordinator & President of NCTM Note: 20 Title I elem schools out of 24 |
| Durham Public School District, NC | Awaiting Response | Note: 23 Title I elem schools out of 28 |
| Bismarck School District 1, ND | Using with supplementation | Accountability Dept. Note: 3 or 4 Title I elem schools out of 15 |
| Coventry Local School District, OH | DROPPED | Director of Curriculum & Instruction |
| Fairfield City School District, OH | Using with supplementation (Federal professional development funding) 31.6% econ. disadvantaged | Elem Curriculum Coordinator Note: 5 elem schools in district – scores not increasing |
| Hudson City School District, OH | Using with supplementation | Director of Teaching & Learning Note: 4 elem schools (total student population = 2,100) |
| Lebanon City School District, OH | DROPPED | Director of Instruction & Technology |
| Painesville City School District, OH | DROPPED | Math Science Curriculum Specialist Note: 2 Title I elem schools out of 3. (k-2 use MI only as supp) |

Part I – Table of Survey Results and Contact Sources (Continued)

| Cited Districts/School(s) | Status of Math Investigations Curriculum in Use? | Survey Response Agency |
|---|---|---|
| Talawanda City School District, OH | Using Grant to support cont'd use - shared w/2 other OH districts - connected with University | Math Instruction Leader Note: 3 elem schools in district |
| Three Rivers Local School District, OH | DROPPED | Central Office Administrator & Technical Curriculum Support |
| Wickliffe, OH | DROPPED | Principal Note: 1 elem school (Title I) |
| Gervais School District 1, OR | DROPPED | Math Coordinator Note: 1 elem school (Title I) |
| N. Clackamas, OR | Using (aligns with State standards) | Asst. to Elem Professional Development. Note: 7 Title I elem schools out of 19 |
| Portland School District 1J, OR | Awaiting Response | Title I |
| Reynolds School District 7, OR | Awaiting Response | District Office; 12 elem schools |
| Salem-Kaiser Elementary School District, OR | Using with supplementation | Elementary Math Specialist Note: 23 Title I elem schools out of 46 & ranked below state level |
| Sutherlin School District 130, OR | DROPPING | District Principal 1 k-3 & 1 4-6 elem school (both Title I's) |
| West Linn-Wilsonville School District 3, OR | Using with supplementation | Deputy Superintendent Note: 2 Title I elem schools out of 7 total district elem schools |
| Chariot Regional District, RI | DROPPED | Curriculum Director |
| Situate Town School District, RI | Using with supplementation | Assist Super & Dir of Curric Note: 1 Title I elem school out of 3 Actual avg class size = 20 |
| Smithfield School District, RI | Using with supplementation | Asst Principal Note: 1 Title I elementary school out of 4 total schools |

Part I – Table of Survey Results and Contact Sources (Continued)

| Cited Districts/School(s) | Status of Math Investigations Curriculum in Use? | Survey Response Agency |
|--|---|---|
| Rapid City Area School District 51-4, SD | Using (National Science Foundation Math School Partnership Grant) | Curriculum Director Note: 6 Title I elem schools out of 15 |
| Alpine District, Utah | DROPPED (Banned by USOE as primary text materials 2007) | Utah State Office of Education; state legislature initiative 2009 requires funding for Singapore Math |
| Arlington District 16, WA | DROPPING | Washington State Office of Superintendent of Public Instruction |
| Bellevue District 405, WA | DROPPING | Washington State Office of Superintendent of Public Instruction |
| Clover Park District 400, WA | DROPPING | Washington State Office of Superintendent of Public Instruction |
| Eastmont School District 206, WA | DROPPING | Washington State Office of Superintendent of Public Instruction |
| Lake Stevens District 4, WA | DROPPING | Washington State Office of Superintendent of Public Instruction |
| Oak Harbor, WA | DROPPING | Washington State Office of Superintendent of Public Instruction |
| Richland School District 400, WA | DROPPING | Washington State Office of Superintendent of Public Instruction |
| Black River Falls, WI | DROPPING | Curriculum Coordinator |
| La Crosse, WI | DROPPING | Supervisor, Elementary Math |
| River Falls, WI | DROPPING | Director of Academic Services |
| Superior, WI | DROPPING | Director of Curriculum & Instruction |

Note: Title I – Under the federal No Child Left Behind (NCLB) act of 2001 Schools where at least 40 percent of the children in the school attendance area are from low-income families or at least 40 percent of the student enrollment are from low-income families are eligible to receive federal Title I funds. The proportion of low-income families is most frequently measured by the percent of students receiving free and reduced-price lunch. Title I funds are to be used for programs designed to improve the academic achievement of children from low-income homes. Over half of all public schools receive funding under Title I. No Child Left Behind requires all districts and schools receiving Title I funds to meet state "adequate yearly progress" (AYP) goals for their total student populations and for specified demographic subgroups. If a school receiving federal Title I funding fails to meet the AYP target for two consecutive years or more, the school is designated in need of improvement and faces consequences, including public school choice for students in the school, supplemental services (including tutoring) for students, certain corrective actions and school restructuring.

Part II –District Math Curriculum Director/Coordinator
Remarks

**Testimony of School District Math Curriculum Directors
and Coordinators on Math Investigations**

****Provided to PWCS Board Members****

February, 2009

“Success Stories”?

Coventry Local School District, OH – Curriculum Director

“I find it somewhat funny that we dropped Investigations around the 2002-2003 school year. It was not a successful program in our school district, and we decided to return to a more traditional program k-12. So, I am not sure why Pearson has us listed as a success story. We saw the dramatic increase in state test scores AFTER we dropped the program and went with a more traditional approach. Unfortunately, or fortunately for our district, I have a conflicting opinion. I know that all the districts in our area have the same conflicts taking place. In my opinion, the program was created by professors and researchers who do not deal with the day to day situation of elementary classrooms. It could be a nice supplemental to a traditional math program but it is nothing more than that.”

[Email of 2/6/09]

Fairfield City School District, OH - Elementary Curriculum Coordinator

"I did ask teachers to keep their thoughts to themselves and not express their dislike of the program to the parents. And that actually worked. I told them they could have the parent call me or they could say whatever they wanted about the program when we had our PDs [*professional development*]. I asked them to do their venting any way but [*not*] with the parents and the children. Another thing in our favor was that the school that did the pilot was one of our lower achieving schools, but their test scores went up significantly."

[Email of 2/9/09]

Lebanon School District, OH - Director of Instruction and Tech.

“We do not use MI as our core textbook because it had many gaps in the alignment to our state standards. We designed and currently use our own student workbooks and teacher manuals at grades 1-2. Grades 3-6 use a variety of supplemental materials. Our teachers use a variety of resources to create a more balanced-approach. We discovered the gaps in MI after the fact when implemented. Scores increased in grades k-4 but then dropped in grades 5-7. We are rated Excellent with Distinction – top rating in the state but could not show evidence that the MI program made this happen. We had more teacher difficulty in deploying – need lots of ONGOING professional development to get the Bang for the Buck. Chief complaints from teachers having inadequate time to teach MI was an ongoing issue.

[Email dated 2/5/09]

Black River Falls School District, WI – Curriculum Coordinator

“We implemented Investigations in grades k-5 about 7 years ago. Two years ago we went with a new text book. Some teachers loved Investigations, others hated it and did not use the materials at all. The activities were too “open-ended” for some of our teachers. We decided to switch in order to get more consistent use by all teachers. There seems to be a very positive attitude toward the change.”

[Email dated 2/6/09]

Naperville School District, IL – Gifted Coordinator & Math Project Manager

“We supplemented with Investigations only since 2000. In fact, we never purchased the student work books. Rather, we created our own math curriculum - binders for our 14 elementary school math teachers... We are now reviewing two new text books and will not be considering Investigations for '09-'10. Instruction remains teacher-guided and consistent with time restraints not being a factor. Our classroom sizes vary from 20 to 26 and we're looking forward to implementing a “complete” math text book.”

[Telephone conversation of 2/6/09]

La Crosse School District, WI– Director of Math/Curriculum

“No improvement at all with the math scores since 2002. We dropped MI and are now using a different text book. We are very happy to date.”

[Telephone conversation of 2/6/09]

Columbia School District, MO – Curriculum Director

“We will not be using MI as of the Fall of '09. MI is not among the materials we are considering. This is a result of a directive from an interim superintendent. This was not and is still not something the materials committee and some community members and parents are happy with. Although we are in compliance with the directive that “we will return to a traditional program”. Note that the only gap in MI and the state standards I identified was “measurement”. Our scores at the elementary level have fallen the past few years. There are many possible reasons and combinations of reasons for this decline. There is not one thing that can be attributed to the decline. Although, the naysayer would say the cause is MI. However, our population has changed, our commitment to staff development has changed, our State assessments have changed, and the level of community support for the schools has changed.”

[Email dated 2/5/09]

Framingham School District, MA – Director of Curriculum & Staff Development:

“We have just completed a math pilot review and are dropping MI. We found, through the current pilot programs that Investigations did not meet current MA curriculum standards. For example, Kindergarten time and money. We also found that professional development was based on how to use the text. Our new text book focuses on Mathematics... more important to us.”

[Email dated 2/6/09]

Three Rivers School District, OH – Curriculum Administrator

“I am the curriculum director for the district and will try to give you some background information. Last year the math adoption team chose a replacement for MI. This school year is the first year of implementation, and we are finding this to be a combination of MI skills and a more traditional math series. One of the major concerns of our staff members was that students were lagging behind in basic computational skills. We believe our new text book will help us close that gap. Our district is rated “Effective” in the State of Ohio, and we are working hard to continue to improve math scores for all students.”

[Email dated 2/5/09]

Chariho School District, RI – Curriculum Director

“We no longer use MI. Rhode Island standards changed. The new MI series met those standards less than the original series. Although math scores increased in our district (we are the top 5% school district in our state), reading scores decreased. The curriculum should align with the standards without relying on supplementation. A balanced approach to teaching math is an undertaking I’d not dare implement with MI. We chose a new text book and piloted it in one class per grade level last year and saw a dramatic increase of 8 points in the Spring of ’08. We are very happy with the new text books and the teachers are finding more time to differentiate effectively. Text books which require little to no supplementation should be all it takes. I would never recommend a text book that doesn’t align with our state standards.

[Telephone conversation of 2/4/09]

Gadsden School District, NM – Director for Instructional Support

“MI is the current curriculum. MI is the core text but there are units that are augmented with materials from other sources. MI is built upon best practices - research that validates how many students learn math. It varies from the traditional pedagogical approach, into the constructivist theory of learning. For the most part, MI matches our state’s standards. Our scores are continuing to escalate. We are ranked 39 out of 93 school districts currently. We received a grant to provide monies to sustain professional development to support teachers to implement reformed pedagogy and the materials that best exemplify that pedagogy is MI. Teachers have 90 minutes of math instruction on a daily basis. Our model is 60 minutes to present the current unit and 30 minutes of workshop time for differentiated instruction. We have Connected Math in middle school. State tests for 6th and 7th graders are extremely challenging, but we are keeping pace.”

[Email dated 2/5/09]

ⁱ http://www.pearsonschool.com/live/assets/200749/InvestigationsVM-17-3005-I-May2007_4561_1.pdf. "Evidence of Success with Investigations in Other School Districts." *Mathematics Online*, Prince William County Schools. February 2009. February 6, 2009 <http://www.pwcmath.com/Success.htm>;

ⁱⁱ http://www.pearsonschool.com/live/assets/200749/InvestigationsVM-17-3005-I-May2007_4561_1.pdf

ⁱⁱⁱ http://www.pearsonschool.com/live/assets/200749/InvestigationsVM-17-3005-I-May2007_4561_1.pdf

^{iv} <http://www.nysed.gov>

^v <http://www.pwcteachmathright.com>