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Pennsylvania Educational Leadership

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Foreword

The articles in this issue of *Pennsylvania Education Leadership* promote the stated mission of the organization, which is **Educators impacting teaching and learning through leadership.** Specifically, this issue addresses implementing classroom and organizational practices that support teaching and learning and providing leadership to resolve issues and concerns that impact school organization and its students.

In the lead article *Jane Wilburne* and *Cynthia Taylor* provide practical suggestions for incorporating Common Core standards into instructional practice in the mathematics classroom. Through discussion of Standards for Mathematical Practice and classroom vignettes, the authors provide direction for identifying student behaviors leading to proficiency. They also provide a list of resources to assist in incorporating the Common Core into the instructional process.

The second article also speaks to mathematics instruction. *Kristin Borda* and *Kathleen Conn* use Egan's Philosophic Planning Framework as a template to present a Pre-Algebra curriculum unit that aims to emotionally engage and motivate students by setting the unit in the context of the meaning of poverty and social justice. PSSA Academic Standards, Common Core State Standards, and Big Ideas and Essential Questions from Pennsylvania's Standards Aligned System that relate to the unit are embedded in the unit.

In the third article *Bryan Svencer* provides ideas and resources for integrating technology and modern media into the classroom. He defines this practice as "edutainment" and describes how the use of modern technology can lead to greater student involvement in the learning process.

The fourth article chronicles a phenomenological study to explore the factors leading to academic achievement by students in two small, economically disadvantaged elementary schools. *Patricia Ahrens* reports that her study's results indicate that the small school structure and deep sense of community were factors linked to the schools' success.

In the fifth article a mother-daughter author team, *Helen and Elissa McCracken,* share their experiences and personal feelings as the daughter was the victim of cyberbullying. Each provides her own perspective on the journey and ways in which parents and schools can respond to this growing social problem.

Part of educational leadership involves dealing with conflict. *Jim Rowell,* in the final article, describes the cycle of conflict and makes suggestions for effectively managing the resolution of the conflict.

We hope that you find the articles to be stimulating reading. Feel free to contact the authors about their work and ideas. If you have an idea for an article, please submit it for consideration.

And a final word: It has been our pleasure to serve as the co-editors of this journal for the past seven years. Working on each issue has been a professionally rewarding experience – as we trust it has been for you. New editors, Erin McHenry-Sorber and Kathleen Provinzano from Wilkes University, will assume responsibility beginning with the fall issue. We wish them well as they continue to move the journal forward in the future.

Denise G. Meister
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Co-Editors

The Common Core Mathematics Classroom: Essential Student Practices

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The recent adoption of the Common Core State Standards for Mathematics in Pennsylvania (2010) has called for rapid changes in curriculum, instruction, and assessment across school districts. These changes seem to be occurring with either an aroma of excitamobility (the act of moving fast due to excitement) or chaos (the state of disorder or confusion), depending on the district's disposition towards the required changes. School districts must quickly decide how to adapt their mathematics curriculum to align with the PA Common Core Mathematics Standards; select or modify current resources such as textbooks, tasks, and software programs to address the standards; modify assessments; and make the appropriate changes to reporting documents such as report cards or progress reports. To be completed successfully, these changes need to take place over time and with plenty of discussion among all key educators involved, such as administrators, teaching faculty across grade levels, special education faculty, and instructional coaches.

Central to meeting the expectations of the Common Core Standards is the design and mechanics of the mathematics lesson occurring in each classroom. The Common Core State Standards for Mathematical Content (http://www.commoncorestandards.org) emphasize coherence, focus, and rigor across the mathematics curriculum at each grade level. Coherence requires the mathematics to be connected across content areas and grade levels. Focus allows educators to narrow the scope of the content. Finally, rigor involves deep conceptual understanding, procedural fluency, and application of mathematics. These Content Standards provide a framework for robust mathematics and identify content-related learning progressions that describe the mathematics that should be taught before and after each lesson.

Students, however, also need to make sense of mathematics and employ reasoning when "doing" mathematics. Thus, in addition to the content standards, the Common Core State Standards emphasize student behaviors that should occur in the mathematics classrooms. These behaviors, also referred to as "habits of mind," are described in the Common Core as the Standards for Mathematical Practice (SMP). There are eight mathematical practices that define the proficiencies and processes associated with expertise in mathematics expected of all students across all grade levels (see figure 1). These practices are student-centered—behaviors students across all grade levels should be demonstrating when doing mathematics to promote learning. "The Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should seek to develop in their students. These practices rest on important 'processes and proficiencies' with longstanding importance in mathematics education" (CCSSI, 2010, p. 6).

Figure 1. Standards for mathematical practice (CCSSI, 2010)

COMMON CORE STATE STANDARDS FOR MATHEMATICS

Standards for Mathematical Practice

The Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should seek to develop in their students. These practices rest on important "processes and proficiencies" with longstanding importance in mathematics education. The first of these are the NCTM process standards of problem solving, reasoning and proof, communication, representation, and connections. The second are the strands of mathematical proficiency specified in the National Research Council's report Adding It Up: adaptive reasoning, strategic competence, conceptual understanding (comprehension of mathematical concepts, operations and relations), procedural fluency (skill in carrying out procedures flexibly, accurately, efficiently and appropriately) and productive disposition (habitual inclination to see mathematics as sensible, useful, and worthwhile, coupled with a belief in diligence and one's own efficacy).

1. Make sense of problems and persevere in solving them.
Mathematically proficient students:
- explain to themselves the meaning of a problem and look for entry points to its solution.
- analyze givens, constraints, relationships, and goals.
- make conjectures about the form and meaning of the solution attempt.
- consider analogous problems, and try special cases and simpler forms of the original problem.
- monitor and evaluate their progress and change course if necessary.
- transform algebraic expressions or change the viewing window on their graphing calculator to get information.
- explain correspondences between equations, verbal descriptions, tables, and graphs.
- draw diagrams of important features and relationships, graph data, and search for regularity or trends.
- use concrete objects or pictures to help conceptualize and solve a problem.
- check their answers to problems using a different method.
- ask themselves, "Does this make sense?"
- understand the approaches of others to solving complex problems.

2. Reason abstractly and quantitatively.
Mathematically proficient students:
- make sense of quantities and their relationships in problem situations.
    - *decontextualize* (abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents) and
    - *contextualize* (pause as needed during the manipulation process in order to probe into the referents for the symbols involved).
- use quantitative reasoning that entails creating a coherent representation of quantities, not just how to compute them.
- know and flexibly use different properties of operations and objects.

3. Construct viable arguments and critique the reasoning of others.
Mathematically proficient students:
- understand and use stated assumptions, definitions, and previously established results in constructing arguments.

- make conjectures and build a logical progression of statements to explore the truth of their conjectures.
- analyze situations by breaking them into cases.
- recognize and use counterexamples.
- justify their conclusions, communicate them to others, and respond to the arguments of others.
- reason inductively about data, making plausible arguments that take into account the context.
- compare the effectiveness of plausible arguments.
- distinguish correct logic or reasoning from that which is flawed
    - Elementary students construct arguments using objects, drawings, diagrams, and actions.
    - Later students learn to determine domains to which an argument applies.
- listen or read the arguments of others, decide whether they make sense, and ask useful questions.

4. Model with mathematics.

Mathematically proficient students:
- apply the mathematics they know to solve problems arising in everyday life, society, and the workplace.
    - In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community.
    - By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another.
- simplify a complicated situation, realizing that these may need revision later.
- identify important quantities in a practical situation.
- map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas.
- analyze those relationships mathematically to draw conclusions.
- interpret their mathematical results in the context of the situation.
- reflect on whether the results make sense, possibly improving the model if it has not served its purpose.

5. Use appropriate tools strategically.
Mathematically proficient students:
- consider available tools when solving a mathematical problem.
- are familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools.
- detect possible errors by using estimations and other mathematical knowledge.
- know that technology can enable them to visualize the results of varying assumptions, and explore consequences.
- identify relevant mathematical resources and use them to pose or solve problems.
- use technological tools to explore and deepen their understanding of concepts.

6. Attend to precision.
Mathematically proficient students:
- try to communicate precisely to others.
- use clear definitions in discussion with others and in their own reasoning.
- state the meaning of the symbols they choose, including using the equal sign consistently and appropriately.
- specify units of measure and label axes to clarify the correspondence with quantities in a problem.
- calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the context.
    - In the elementary grades, students give carefully formulated explanations to each other.
    - In high school, students have learned to examine claims and make explicit use of definitions.

7. Look for and make use of structure.
Mathematically proficient students:
- look closely to discern a pattern or structure.
    - Young students might notice that three and seven more is the same amount as seven and three more.
    - Later, students will see 7 x 8 equals the well-remembered 7 x 5 + 7 x 3, in preparation for the distributive property.
    - In the expression $\mathbf{x}^2 + 9\mathbf{x} + 14$, older students can see the 14 as 2 x 7 and the 9 as 2 + 7.
- step back for an overview and can shift perspective.
- see complicated things, such as some algebraic expressions, as single objects or composed of several objects.

8. Look for and express regularity in repeated reasoning.
Mathematically proficient students:
- notice if calculations are repeated.
- look both for general methods and for shortcuts.
- maintain oversight of the process, while attending to the details.
- continually evaluate the reasonableness of intermediate results.

There are two underlying frameworks for the Standards for Mathematical Practice. The first is the National Council of Teachers of Mathematics' (NCTM) five Process Standards which are as follows: a) problem solving, b) reasoning and proof, c) communication, d) connections, and e) representations (NCTM, 2000). The second are the Strands of Mathematical Proficiency in *Adding It Up* (National Research Council, 2001), which interweave and are independent in the development of mathematical proficiency. The five strands are these: a) conceptual understanding, b) procedural fluency, c) strategic competence, d) adaptive reasoning, and e) productive disposition. Together they form the core of the mathematical practices needed for students to become proficient with mathematics.

These eight SMP's emphasize the need to shift the mathematical thinking in the classroom from the teacher to the students. They are the active verbs that describe what students should be doing to engage in mathematics and take ownership of their learning. It is important for teachers to recognize that students must regularly be provided the opportunity to develop these practices in order for them to become routine "habits of mind." Students need to see examples of how these practices apply in a mathematical situation, and they must be guided to use the practices effectively. Since the practices are meant to be interconnected, they should be emphasized together rather than separately; and they should be emphasized daily rather than weekly. They are an essential part of learning and doing mathematics and need to be taught with the same intention and attention as the mathematical content. Table 1 (next page) lists the Standards for Mathematical Practice along with sample student behaviors.

Table 1
*Classroom Examples of Student Behavior Demonstrating the Standards for Mathematical Practice**

Standards for Mathematical Practice	***Sample of student behavior for K-5***	***Sample of student behavior for 6-8***	***Sample of student behavior for 9-12***
Make sense of problems and persevere in solving them.	A student sorts through a set of attribute blocks and compares the displayed pattern to the remaining blocks. A child uses the attribute blocks to help him/her conceptualize the problem.	An eighth grader can explain the relationship between an equation, verbal description, table, and graph of a problem where he/she needs to continue the pattern to determine the n^{th} rule.	A high school student using a graphing calculator changes the viewing window on his/her graphing calculator to get the needed information.
Reason abstractly and quantitatively.	Second graders justify that an odd plus an odd is an even by lining up in two lines (where each line contains an odd number of students). When they pair up with a student from the other line, there are no students that are left unpaired…thus, an odd plus an odd is an even.	A student investigates a numeric pattern and generalizes what he/she sees happening as the pattern grows (either verbally or using algebraic notation).	
Construct viable arguments and critique the reasoning of others.	A student demonstrates how an attribute block train becomes a concrete referent for his/her thinking as he/she justifies and communicates conclusions to others as well as responds to the arguments of others.	A student decides whether an argument posed by another student makes sense and asks clarifying questions in order to enhance the argument articulated by the first student.	
Model with mathematics.	A student examines a real-world situation critically to determine whether division or multiplication would be appropriate to determine a solution.	A sixth grader might apply proportional reasoning to analyze a real-world problem in the community.	A high school student might use algebra to solve an area or perimeter problem or use a function to describe how one quantity of interest depends on another.

Standards for Mathematical Practice	*Sample of student behavior for K-5*	*Sample of student behavior for 6-8*	*Sample of student behavior for 9-12*
Use appropriate tools strategically.	A student uses square tiles to represent pictorially the first several patterns in a sequence…paying particular attention to color-coding.	A student uses a ruler, protractor, and sheets of paper to make different kinds of quadrilaterals while examining and "guaranteeing" various properties of quadrilaterals.	A high school student identifies a relevant external mathematical resource (e.g., content located on a website), and uses that resource to pose or solve a problem
Attend to precision.	A student uses "30" and "50" instead of "3" and "5" when adding 37 + 52 to emphasize place value.	Middle and high school students are careful about specifying units of measure. They also accurately calculate and efficiently express numerical answers with a degree of precision (e.g., two decimal places, nearest whole number) appropriate for the problem context.	
Look for and make use of structure.	A first grader notices that 3+7 is the same as 7+3	A seventh grader notices that 7×6 is the same as 7×4+7×2, in preparation for learning about the distributive property.	A high school algebra student notices that the 15 in $x^2 + 8x + 15$ is 3x5 and the 8 is 3+5 in order to factor the trinomial.
Look for and express regularity in repeated reasoning.	An upper elementary student might notice when dividing 35 by 11 that he/she is repeating the same calculation over and over again, and conclude there is a repeating decimal.	A group of students identify several different ways of generating a rule to complete inputs/outputs of a function machine. Several suggestions are: x5 – 2, times 5 minus 2, 5x – 2. The group discusses the rule making connections to past examples, articulating the best way to algebraically represent the rule and the reasonableness of the restrictions of the problem.	An Algebra II student notices a pattern when factoring trinomials: $X^2 + 5x + 6 = (x + 2)(x + 3)$ $X^2 + 6x + 8 = (x + 4)(x + 2)$ $X^2 + 7x + 10 = (x + 2)(x + 5)$ and successfully factors $X^2 + 7x + 12$ as $(x + 3)(x + 4)$

Sources: Inside Mathematics (www.insidemathematics.org), Illustrative Mathematics (www.illustrativemathematics.org), and author experiences.

Classroom Vignettes

Mathematics teachers across all grade levels, K-12, should recognize the importance of providing opportunities for students to engage in the mathematical practices and deliberately plan for these opportunities to occur. Every lesson may not reflect all of the practices, but focusing attention on these practices daily will help them become second nature to students as they develop mathematical proficiency. We offer several sample vignettes from an elementary, middle level, and high school classroom to show how the practices can be emphasized.

Elementary Classroom

Students in Mrs. Hilko's third-grade mathematics class were beginning to explore multiplication and were asked to take a few minutes to work on the following problem.

> Cupcakes come in packs of 4. Henrietta's mother needs 32 cupcakes for her birthday party. How many packs of cupcakes should Henrietta's mother purchase?

As the students worked on the problem individually, Mrs. Hilko noticed many of the students were drawing pictures of cupcakes and circling groups of 4. Other students had columns of 4s they were adding on their paper. After several minutes, she asked the students to share some of their solutions with the class.

Amy shared how she made a list of 4s and kept adding them until she had a sum of 32. Mrs. Hilko had Amy explain her work to the class and was sure to have Amy use correct mathematics vocabulary. Mrs. Hilko wanted the students to notice how Amy *attended to precision* with her mathematical vocabulary and with her explanation.

Jonathan mentioned that he made pictures with 4 cupcakes in a circle and kept drawing cupcakes until there were 32 on the page. Mrs. Hilko asked the class to take a minute and think about the two strategies that were presented. What was the same about the two strategies and how were they different?

Her goal was to engage the class in a discussion to help them see how Jonathan *modeled the problem* by drawing pictures whereas Amy used the structure of repeated 4s. Mrs. Hilko was also clearly engaging her students in the practice of *constructing viable arguments and critiquing the reasoning of others*. Mrs. Hilko's plan for the lesson was to emphasize the fact that there was no one "right way" to solve the problem and that the practice of *making sense of problems* includes understanding the approaches and strategies of others. Also, she planned to have the students compare the mathematical processes used to help them learn how to *construct viable arguments* and determine whether they were viable arguments.

Middle Level Classroom

In Mr. Tyler's seventh-grade mathematics class, the students were working on the following problem.

> A set of 5 fine point markers sold for $4.59. A set of 4 thick point markers sold for $3.89. Which package of markers is the better buy?

Mr. Tyler asked his students to use their whiteboards to write down which group of markers should be the better buy and explain why. As most of the students finished, Mr. Tyler asked them to explain how they solved the problem with their shoulder partner. He pointed out that he expected the students to listen to

each other's explanation and decide whether they made sense. He also expected them to ask questions to help the person explaining his/her work clarify his/her process and solution.

Mr. Tyler planned to have the students share with their shoulder partner as a way to engage each of them in *constructing viable arguments* and justifying their conclusions. By requiring students to ask questions to each other, they are ensuring that their partner has *made sense of the problem* and their solution. He also wanted the students to *reason abstractly* so he extended the problem by asking the students whether purchasing quantities of markers would make any difference in determining whether the fine markers were a better buy over the thick markers. He wanted them to prove their answers using tables, charts, or graphs.

High School Classroom

In Mrs. Collins geometry class, her students were exploring the relationship between the sides of a triangle to discover the triangle inequality theorem. She gave them each a bag of straws that were precut into 3", 4", 10", and 12" sizes. Her activity guided the students to determine whether a triangle could be made with the following size straws:

3", 3", 3" _____	4", 4", 4" _____
3", 3," 4" _____	4", 4", 10" _____
3", 3", 10" _____	4", 4", 12"_____
3", 3", 12" _____	3", 4", 10" _____
3", 4," 4" _____	3", 4", 12" _____

Before she had the students work in groups, she had them analyze the different cases and make a *conjecture* as to a rule for creating triangles with different side lengths. After they wrote their conjectures, they worked in small groups attempting to make various types of triangles with the straws. They recorded whether a triangle could be formed and wrote a rule to describe the lengths that worked. Mrs. Collins also wanted them to *verify their rule* by giving *counterexamples* with straw lengths that could not make a triangle. The students shared their conjectures with the class and explained how the triangles could be formed or why they could not be formed.

Mrs. Collins wanted her students to *make use of structure* and look at the relationship between the side lengths of straws that formed a triangle. She also wanted the students to be engaged in *modeling the mathematics* with the straws since the technology lab was not available. She planned the lesson to be sure the students *made sense* of their mathematical rules and they were actively engaged in the mathematics.

These short examples highlight how different the practices may be enacted in each classroom. There are no set prescribed approaches for emphasizing the mathematical practices, but a common thread runs across all of them. Students are the ones who should be engaged in the practice. They are the mathematical learners who need to have the experiences in using the practices as they do mathematics. They need to develop these behaviors and use them routinely across all grade levels.

Evidence of the Mathematical Practices in the Classroom

A major shift in Common Core mathematics classrooms should be the emphasis on what the students are doing. Students should be thinking and doing mathematics, not just copying notes from the board. In each class, students should be talking about mathematics either with other students or in whole class discussions. The classroom environment should be respectful of each student's contribution with misconceptions and errors highlighted as learning opportunities. The emphasis should be on the variety of mathematical processes and strategies used, not on the answer. Also, the students should be explaining, justifying, and proving their solutions.

Teachers can guide classroom conversations by posing questions such as: How do you know? Can you explain why that works? How could you prove your answer? and, Can you use another approach? Skillful planning of questions such as these can help teachers engage students in the eight mathematical practices.

As administrators and instructional coaches work with teachers to embed the Common Core Mathematics Content and Practices into their classrooms, there are several questions that should be asked to promote discussions. Specifically: a) Who is doing the mathematical thinking in the lesson? b) Is the instructional goal of the lesson to understand the mathematics or to get the correct answer? c) What is the cognitive demand for the posed tasks? and d) How are *all* the students engaged in the mathematics?

Resources for Professional Development

Successful transition to the PA Common Core Standards for Mathematics will require a serious commitment to professional development to help all mathematics teachers adapt to the dramatic shift in classroom practices (Hirsh, 2012). However, results of a survey conducted with 35 of the 45 states that have adopted the Common Core State Standards reveal that 60% of the states cite adequate resources to fully implement the Common Core standards as a major challenge, and 57% of the states cite providing professional development for their educators as a major challenge to fully implement the Common Core Standards (Kuber & Rentner, 2012).

In Pennsylvania, many school districts are struggling to find funds to send teachers to conferences, training seminars, and workshops focused on the Common Core implementation and other forms of professional development. Thus, a well-designed professional development plan is essential to meet districts needs within the constraints of the budgets.

One of the most effective professional development approaches to promote curricular and instructional innovations is to immerse teachers in collaboratively studying curriculum, effective teaching of the curriculum, and analyzing their students' understanding of that curriculum (Huggins, Scheurich, & Morgan, 2011; Wayne, Yoon, Zhu, Cronen, & Garet, 2008). Fortunately, many educational organizations recognize the need for professional development resources to help such collaborative groups learn how to implement Common Core curriculum and promote the mathematical practices. For example, many websites provide narrative exemplars of classroom scripts, samples of student work, and videos of classroom teachers modeling instructional strategies. Sample tasks that have been tested and aligned with the Common Core are available on these websites and often include the learning trajectory to show how student learning should progress throughout the task. We have provided a list of websites that offer professional development resources to help support implementation of the Common Core Standards for Mathematics in Figure 2.

Figure 2. Websites to access professional development materials related to the common core mathematics standards for content and practice

- ASCD Educore *http://educore.ascd.org/channels/*
    - Shell Center for Mathematical Education provides videos and resources for

- Common Core professional development.

- Common Core Achieves *http://commoncore.americaachieves.org/*
  - America Achieves provides lesson plans, videos, and professional development materials for the Common Core.
- Illustrative Mathematics Project *http://Illustrativemathematics.org*
  - The Illustrative Mathematics Project provides sample tasks and problems to illustrate the Common Core standards.
- Inside Mathematics *http://www.insidemathematics.org/*
  - Inside Mathematics has web-based resources to support educators in building deeper understanding of what the Common Core Standards look like in practice.
- Linking Content and Practices (Arizona) *http://www.azed.gov/standards-practices/academic-standards/math/*
  - Websites and resources for professional development
- Mathematics Assessment Project (MAP) *http://map.mathshell.org.uk/materials*
  - The Mathematics Assessment Resource Center provides sample tasks and resources for Common Core implementation.
- Math Common Core Coalition*http://www.nctm.org/standards/mathcommoncore/*
  - Various resources for professional development, lessons, and links to other worthy websites.
- Standards Aligned System*www.pdesas.org*
  - The Pennsylvania Standards Aligned System provides standards, assessments, instruction, materials and resources, and curriculum for the PA. Common Core.
- Teaching Channel *www.teachingchannel.org*
  - Instruction and informational videos professional development.
- Turn On CC Math *http://turnonccmath.net/*
  - Interactive website on the learning progressions in mathematics

Professional learning communities and district professional development sessions should begin by reading the PA Common Core Standards for their grade level and in their subject area. Discussions can begin by focusing on questions such as: How do the PA Common Core Standards compare with the PA Academic Standards for Mathematics? Which standards are similar? Which standards are new? Which standards appear at a grade level above or below your grade? How do your classroom and end-of-unit, and/or formative assessments align with the learning expectations of the Common Core? How do your curriculum instructional materials align with the CCSS? Are there gaps in the materials, if so, will you need to create or locate materials? How are the mathematical practices aligned with the mathematical

content? What type of evidence is needed to demonstrate students' are employing the mathematical practices?

Conclusion

The Common Core Mathematics Classroom should look different from a traditional mathematics classroom. When an individual peeks into a mathematics classroom that emanates the vision of the Common Core movement, they may observe a teacher facilitating discussions around mathematical explorations that are coherent, focused, and include rigor. They should also see students actively engaged in discussions about mathematics, their work, and their reasoning. The students should be explaining, conjecturing, justifying, and proving their work, both orally and in written form. There should be various types of collaboration going on among students and between the students and the teacher. In addition, teachers should set aside some time for students to reflect on their learning and process their understanding in writing.

The eight Standards for Mathematical Practice provide a framework identifying important behaviors for students to develop when learning mathematics. The SMPs are not to be taught as separate lessons, rather they should be thoughtfully embedded in lessons so K-12 students have the opportunity to develop these behaviors. "Research has shown that teachers have the strongest impact on students and their learning" (Bush & McGatha, 2010, p. 19). Thus, it is vital for teachers to provide the opportunity for their students to develop the mathematical practices as they help them develop proficiency with the mathematics content that is in the vision of the Pennsylvania Common Core Standards for Mathematics.

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The Common Core Mathematics Classroom: Essential Student Practices

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The recent adoption of the Common Core State Standards for Mathematics in Pennsylvania (2010) has called for rapid changes in curriculum, instruction, and assessment across school districts. These changes seem to be occurring with either an aroma of excitamobility (the act of moving fast due to excitement) or chaos (the state of disorder or confusion), depending on the district's disposition towards the required changes. School districts must quickly decide how to adapt their mathematics curriculum to align with the PA Common Core Mathematics Standards; select or modify current resources such as textbooks, tasks, and software programs to address the standards; modify assessments; and make the appropriate changes to reporting documents such as report cards or progress reports. To be completed successfully, these changes need to take place over time and with plenty of discussion among all key educators involved, such as administrators, teaching faculty across grade levels, special education faculty, and instructional coaches.

Central to meeting the expectations of the Common Core Standards is the design and mechanics of the mathematics lesson occurring in each classroom. The Common Core State Standards for Mathematical Content (http://www.commoncorestandards.org) emphasize coherence, focus, and rigor across the mathematics curriculum at each grade level. Coherence requires the mathematics to be connected across content areas and grade levels. Focus allows educators to narrow the scope of the content. Finally, rigor involves deep conceptual understanding, procedural fluency, and application of mathematics. These Content Standards provide a framework for robust mathematics and identify content-related learning progressions that describe the mathematics that should be taught before and after each lesson.

Students, however, also need to make sense of mathematics and employ reasoning when "doing" mathematics. Thus, in addition to the content standards, the Common Core State Standards emphasize student behaviors that should occur in the mathematics classrooms. These behaviors, also referred to as "habits of mind," are described in the Common Core as the Standards for Mathematical Practice (SMP). There are eight mathematical practices that define the proficiencies and processes associated with expertise in mathematics expected of all students across all grade levels (see figure 1). These practices are student-centered—behaviors students across all grade levels should be demonstrating when doing mathematics to promote learning. "The Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should seek to develop in their students. These practices rest on important 'processes and proficiencies' with longstanding importance in mathematics education" (CCSSI, 2010, p. 6).

An Imaginative Education Approach to Pre-Algebra Using a Narrative of Poverty and Social Justice

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Introduction

With the passage of the No Child Left Behind Act of 2001 (NCLB, 2002), every state is required to create assessments aligned to the state's academic standards in language arts and mathematics (United States Department of Education, 2012). The Commonwealth of Pennsylvania met its NCLB obligations by establishing the Pennsylvania Accountability System, which mandates annual testing of public school students in Grades 3-8 and Grade 11, called the Pennsylvania System of School Assessment (PSSA). Pennsylvania schools are evaluated compared to minimum target levels of attendance, graduation rates, and proficiency in reading and mathematics on these tests.

Schools that meet target levels are designated as making Adequate Yearly Progress (AYP). Schools that do not meet target goals are designated as Making Progress, in School Improvement, or in Corrective Action I or Corrective Action II. Schools which fail to meet AYP in any given year must reach target levels for two consecutive years to be reclassified as making AYP. The Commonwealth and NCLB have the same end goal – to ensure that every child in the Commonwealth is "Proficient or Above" in reading and mathematics by the year 2014.

However, current indications suggest that High School X will not achieve 2014 AYP goals. High School X is a real school and the data presented is real, but the school is also a symbol of many poor, high-minority urban and semi-urban schools in the Commonwealth. The district in which this high school is located has been characterized as a "turnaround district" because of its chronic low student achievement. The district serves approximately 3,450 students. The student population is predominantly African American. The median family income in 2009 was $30,900, compared with the state's median income of $49,501. In 2011, the Pittsburgh Business Times ranked this school on the bottom end of the scale used to examine all Pennsylvania public school districts. The district as a whole is in its ninth year of Corrective Action II based on 2011 PSSA scores. Its four-year cohort graduation rate was 44%. The district recently required a state bailout of tens of millions of dollars.

The district had the second-largest budget for instructional services in its county in 2009-2010, approximately $78,145,000.00. This is second only to a neighboring school district, which serves 12,000 students (over three times the population of District X) with an instructional budget of approximately $152,421,000.00 (not even twice as large as District X's budget). Despite these financial data, students in High School X are still not achieving academically. In 2010 only 7% of students in the high school scored at the Proficient level or above in reading. In 2011, the percentage rose to 15%; however, the state target was 72%. In mathematics, the scores went the opposite direction. In 2010, 24% of High School X students scored Proficient or above; in 2011 15% scored Proficient or above. The state target was 67%. High School X is in its fifth

consecutive year in Corrective Action II. The lack of positive correlation between funding and student achievement suggests that something other than increasing the school budget must be done in order for High School X students to progress toward NCLB's 2014 goal.

The Promise of Imaginative Education

Kieran Egan, Professor of Education at Simon Fraser University, British Columbia, has proposed a new model for educational institutions aimed at facilitating in-depth learning. Egan's (2008) proposal, called Imaginative Education (IE), makes use of what he characterizes as somatic, mythic, romantic, philosophic, and ironic understanding to help students make meaning of the content they are learning. "Lessons [are] built . . . using binary opposites, metaphors, story structures, and so on" (p. 172). At high school age, Egan proposes that educators should be guiding students toward a philosophical approach to learning because this is the time when students begin "dealing. . . with the ideas that [are] publicly important and. . . [are] themselves deliberately being encouraged to become [independent] agents" (pp. 176-177).

The high-minority, high-poverty, urban setting of High School X creates some particular challenges for increasing student achievement, and "[t]he problem with our modern idea of the school is not fixable by the array of remedies currently on offer" (Egan, 2008, p. 8). IE approaches learning from a unique standpoint, and may motivate High School X students to engage in learning mathematics, potentially reversing the downward slide of PSSA mathematics scores.

A number of works on math instruction and motivational strategies for mathematics curriculum are available in the literature. Efforts to motivate students, to engage students in mathematics, and to make mathematics relevant for students have been presented by Manning (2007) and Gottfried, Marcoulides, Gottfried, and Oliver (2009). Research has also been conducted on the challenges faced by minority students in high-poverty, urban settings (Reddick, Welton, Alsandor, Denyszyn, & Platt, 2011; Teale & Scott, 2010). The challenges in math instruction at a school with a high-poverty population have also been investigated (McKinney & Frazier, 2008).

However, no research to date has provided the magic bullet. On the other hand, anecdotal data from teachers using Egan's approach in mathematics at the lower grades is encouraging. Implementation of concepts from Egan's IE model have also proven to increase student understanding of science (Hadzigeorgiou & Garganourakis, 2010) and, in particular, of ecology (Fettes & Judson, 2011), both of which employ mathematical modeling.

According to Egan, the components of a unit guided by philosophic understanding are:

- meta-narratives, i.e., a comprehensive story/explanation based on a historical person, event, or universal experience that leads to a kind of generalizable meaning;
- anomalies to the general theory proposed in the meta-narrative;
- student sense of agency; and
- inclusion of somatic understanding, mythic understanding, and romantic understanding. (IERG, 2008, "Planning Frameworks").

This IE model frames the curriculum unit presented here. The unit focuses on poverty and social justice to guide a meta-narrative designed to engage ninth grade students in essential pre-algebra and algebra concepts.

The Background Studies

Comparisons of test results between the United States and other countries on international standardized tests, such as the Third International Mathematics and Science Study (TIMMS) (Roth & Givvin, 2008), draw attention to deficiencies in math instruction in the United States. "The critical need to enhance the science, technology, engineering, and math (STEM) abilities of American children has been acknowledged as a national policy issue" (Gottfried et al., 2009). The National Assessment for Educational Progress (NAEP) shows that, as a group, African American students typically score below their peers in all mathematical content areas (Berry, 2003). While international tests and state tests mandated by NCLB continue to show that not all students are achieving at high levels, scholars in education question what can be done to increase student achievement in mathematics and close achievement gaps between different student populations.

Berry (2003) found that using a standards-based curriculum had significant positive effects on African American student achievement in mathematics. Inquiry as an instructional strategy is also supported in the literature as a means to promote student understanding in mathematics. Sheuermann, Deshler, and Schumaker (2009) demonstrated that, when used in conjunction with traditional teaching methods, inquiry-based instruction is linked to increased achievement, retention, and transfer of math knowledge for students with learning disabilities. However, in high-poverty schools, even when inquiry-based curricula are adopted, teachers may not effectively adopt the new method of approaching mathematics (McKinney & Frazier, 2008). This dichotomy leads to the conclusion that current choices for changing instruction are not enough to improve teaching and learning in mathematics, especially in a high-poverty school setting. It seems that something more revolutionary is needed.

In addition to instruction, student motivation must be addressed when attempting to improve student achievement in mathematics. Manning (2007) states that "in order for students to learn, they must be intrinsically motivated" and "often students lack the necessary study strategies to succeed in school or on high-stakes testing" (para. 3-4). One way that teachers may be able to motivate students to engage in mathematics content is through presenting a social context for the mathematics applications. In 2009, Brelias studied the effects of using a social justice context to engage students in mathematics curriculum, and found that presenting mathematics concepts through the lens of social inquiry helped students "[develop] critical mathematics literacy as a result of their classroom experience with these applications" (Brelias, 2009, p. 338).

While many negative stereotypes are present about students in high-minority, high-poverty urban schools, students who are successful share a common positive view of their community (Reddick, et al., 2011). Therefore, a social context that relates to their community may provide motivation for the students in schools like High School X.

Success Stories with IE

In *The Future of Education: Reimagining Our Schools from the Ground Up*, Egan (2008) proposes a major reconfiguration of how schools go about the process of educating. Egan writes, "fixing [the problems in education] requires of us the [tough] task of rethinking the idea of education we have inherited. . ." (p. 8). The IE approach requires that education be considered a process of developing one's imagination and accumulating and refining cognitive tools.

The IE model for teaching and learning is not new to mathematics. James (2006) used IE to present a lesson on piracy, at an alternative school for students ages 13 to 16, which ultimately led to a geometry investigation: "A sextant is the means by which seafarers of old … discover[ed] where they are on the globe…. I have never seen a group of teens so interested in learning how to use sine, cosine, and tangent calculations. . ." (p. 12). Introducing piracy as a geometry lesson motivated students to put themselves into the unit.

The most recent empirical study Hadzigeorgiou and his colleagues completed with approximately 200 ninth grade science students is particularly relevant (Hadzigeorgiou, Klassen & Klassen, 2011). The researchers employed Egan's ideas about stimulating content learning by framing lessons with both romantic and philosophic concepts. They formulated a quasi-experimental protocol with students from 14-16 years of age, from 19 private preparatory schools in a southeastern European city. The students were average to below average academically, with no significant differences in socio-economic backgrounds. Approximately 100 students from 10 schools were in the experimental group, and the remaining 100 students from 9 comparable schools across the city formed the control group.

Both groups of students agreed to attend one-hour science classes for 10 Saturday mornings, learning about the concepts of alternating current and its ability to transmit electric power. Both groups were instructed in the basic concepts of electricity for four weeks. Beginning in Week 5, teachers instructed the control group in the traditional manner, stressing concepts of alternating current and power. Teachers for the experimental group introduced the students to Nikola Tesla and the bitter controversies that swirled around Tesla as he developed his model of electric transmission using alternating current. They introduced Tesla's heroic efforts to convince doubting colleagues who argued for direct current as the best way to transmit electricity over long distances. This approach encouraged students' development of what Egan characterized as philosophic understanding, humanizing the meaning of the science that Tesla championed.

One week after the 10 weeks of instruction, both groups of students were tested using questions that assessed their understanding of a traditional overview of alternating current concepts. The experimental group whom teachers had instructed using the imaginative, philosophic approach scored an average of 72%; the control group average score was 41%. At eight weeks after the conclusion of instruction, the average score of students in the experimental group was 71%; the control group's average fell to 31%. The students in the experimental group, who had been led to develop an emotional involvement with the heroism of Tesla, both learned and retained the basic physics concepts significantly better than the control group.

The five-year longitudinal Learning for Understanding through Culturally Inclusive Imaginative Development (LUCID) project in British Columbia also proved IE's success with the aboriginal "First Nation" children of the province. Their cultural diversity was no impediment to their achievement when Egan's ideas were used in their lessons. "[I]maginative education makes no particular assumptions about the cultural backgrounds of learners. Instead, it requires teachers to attend to the emotional lives of their students, and to look for the real cognitive strengths that children bring to school" (Fettes, 2007, p. 5).

The focus on developing students' emotional engagement with the topic is the strength of the mathematics unit presented here. The unit is designed for a ninth grade mathematics class at High School X and at similar high schools across the Commonwealth. Like the science unit devised by Hadzigeorgiou and his colleagues, the unit incorporates Egan's IE elements of romantic and philosophic understanding. The unit can be used as an introduction to algebraic concepts. Because of space limitations, only the basic core of the unit is presented in the

appendix. Full implementation would necessarily include scaffolding instruction for special education students, a budget for implementing the unit (including staff development costs), and assessments to determine growth toward PSSA proficiency.

The unit uses a narrative about the social issue of poverty as the foundation of an IE-based pre-algebra unit. Pre-algebra was selected because algebra and algebra-dependent content (number sense, concepts, and applications; data analysis, probability, and statistics) comprise content clusters assessed on the Grade 11 PSSA. Because this curriculum unit integrates standards tested on the PSSAs, the components of IE, the Common Core States Standards (CCSS) (NGA Center, 2010), and Big Ideas and Essential Questions (Pennsylvania SAS, n.d.), the unit will also create new knowledge about the efficacy of IE and student achievement within the current system of Pennsylvania's state curriculum standards. The end product may lead to curriculum changes that increase student achievement.

Details of the Curriculum Unit

The curriculum unit is intended to span three to four weeks of instructional time toward the beginning of the ninth grade academic year, perhaps in early October. This time span assumes approximately 45-minute class periods and a school week consisting of five full days. The mathematics concepts embedded in the unit include identifying and selecting numerical data to answer a question or to support an argument. The teacher will introduce the statistical concepts of mean, median, and mode, and students will use spreadsheets to calculate those descriptors. Students will learn to manipulate data and translate it into graphical form, using the graph to analyze patterns or trends. More advanced students may be introduced to functions and learn the concept of slope of a straight-line graph. Concepts of probability will be introduced by asking students to find anomalies in the meta-narrative of families living in poverty.

Teachers need a minimal amount of staff development in order to implement the unit. The data students must collect are clearly specified and available on the internet. The meta-narrative is identified at the beginning of the lesson, and questions required to elicit students' emotional engagement are indicated. Moreover, students' sense of agency is encouraged by allowing students to collect data and respond to questions at their own pace.

For this lesson, tools of somatic, mythic, and romantic understanding are incorporated in the early part of the unit, but the primary focus is the use of a philosophic understanding framework. Each of these understandings employs different tools:

> •somatic understanding makes use of "senses, emotions, humor, [and] musicality;"
> •mythic understanding makes use of "abstract and affective binary oppositions, metaphor, vivid mental imagery, puzzles and sense of mystery;"
> •romantic understanding makes use of "heroic qualities, extremes of experience and limits of reality, human hopes, fears, and passions;" and
> •philosophic understanding makes use of "political, economical, social, literary, philosophical, or other kinds [of theories] that . . . explain the material to be learned" (IERG, 2008, "Planning Frameworks").

Briefly, the steps in designing any unit using IE are as follows:

1. Identify powerful underlying ideas
2. Shape the lesson or unit
    - 2.1. Find the meta-narrative
    - 2.2. Find anomalies to the general theory
    - 2.3. Present alternative general theories and meta-narratives
    - 2.4. Encourage development of students' sense of agency
    - 2.5. Draw on tools of previous kinds of understanding
3. Identify Resources
4. Formulate a Conclusion
5. Evaluate the Results (IERG, 2008, "Planning Frameworks")

Unit planning in an environment of high-stakes testing must also incorporate a review of relevant state curriculum standards and test content. In order to further ground the study with state supported curricular materials, Big Ideas and Essential Questions were drawn from the Pennsylvania Standards Aligned System (Pennsylvania SAS, n.d.).

One area that will likely require scaffolding is the use of spreadsheet software to manage numbers, complete calculations, and create graphs. "Scaffolding is a support strategy - a way to work closely with a student at the level s/he requires for the best possible learning outcome" (Valkenburg, 2010, p. 33). Niess (2005) recommends several strategies for scaffolding the use of spreadsheets. If it is necessary, the teacher can walk the students through the tutorial provided by Niess (2005), in order to bring students to a level where they can work independently.

Another area of this unit that may require some scaffolding is the use of government websites to find and collect data. McCoy (2008) suggests that the teacher could provide the students with some initial data, so that the students understand what types of data are appropriate for the unit.

Summary

The primary purpose of this IE-based mathematics curriculum unit is to increase student achievement on high-stakes tests at a high-minority, high-poverty, urban high school in Pennsylvania. The social context of poverty, a characteristic shared by many in the community, is used to engage and motivate students. The use of a social inquiry context like this has been shown to increase critical thinking in mathematics. In addition, the literature supports the use of IE to motivate students to learn, because of the personal connections that an IE-based curriculum encourages.

Based on a review of current research, there is reason to believe that using IE to teach mathematics at a high-poverty, high minority, urban school may increase student achievement. However, no solution to improving low-achieving schools is without challenge.

One challenge that may arise from implementing IE is a noticeable change in the kind of activities and dialogue in which students will be participating. Discussions of poverty and social justice may conjure up emotional responses from students and their families. Including community groups that already have the respect of the students and parents in District X may help to ensure that all stakeholders support the curriculum. Gottfried et al. (2009) stress the importance of parent involvement in motivating students in science and math. Teale and Scott (2010) note the importance of parent involvement for student success in urban schools.

Therefore, parents will be encouraged to assist their students with creating the family budget that is part of the IE-based mathematics curriculum unit, and to further support their students by asking them questions about the information they are finding in the independent research portion of the unit.

Because of the critical position that High School X and many similarly-situated, high-minority urban high schools are in, having not met AYP for many years, a dramatic shift from current curricular practices may be necessary to create the much needed improvement in student achievement. That dramatic shift is embodied in the IE framework. In his book, Egan (2008) makes a long-range prediction of how IE can drastically improve the current system of education by the year 2060. High School X and its sister schools cannot afford to wait until the year 2060 to create real change for their students. The students deserve to be exposed to the IE curriculum now.

Appendix

IE-Based Mathematics Curriculum Unit: Poverty and Social Justice

Topic: Pre-Algebra, including concepts of Number Sense, Data Analysis, Probability, Statistics, Patterns, Functions
Target Age: 14-16 (9th Grade)
Major Planning Framework: Philosophic
Unit Length: 3 to 4 weeks

The curriculum unit is intended to span three to four weeks of instructional time toward the beginning of the ninth grade academic year, perhaps in early October. This time span assumes approximately 45-minute class periods and a school week consisting of five full days. The mathematics concepts embedded in the unit include identifying and selecting numerical data to answer a question or to support an argument. The teacher will introduce the statistical concepts of mean, median, and mode, and students will use spreadsheets to calculate those descriptors. Students will learn to manipulate data and translate it into graphical form, using the graph to analyze patterns or trends. More advanced students may be introduced to functions and learn the concept of slope of a straight-line graph. Concepts of probability will be introduced by asking students to find anomalies in the meta-narrative of families living in poverty.

Teachers need a minimal amount of staff development in order to implement the unit. The data students must collect are clearly specified and available on the internet. The meta-narrative is identified at the beginning of the lesson, and questions required to elicit students' emotional engagement are indicated. Moreover, students' sense of agency is encouraged by allowing students to collect data and respond to questions at their own pace.

Brief Description of Unit:

In 2011, the Census Bureau reported that 46.2 million people in the United States are living below the official poverty line (New York Times, September 13, 2011). "Poverty is inextricably related to crime, substandard, living conditions, and inadequate educational opportunity" (McCoy, 2008, p.456). It has been reported that in inner-city District X, 45.5% of children live below the poverty line (City-data.com, 2012), while just miles away, suburban District Y is one of the wealthiest districts in the state. When trying to understand the accuracy of population statistics, it is important for students to have a solid understanding of how data are collected, organized, and represented. Graphs contain a wealth of information that can help in understanding real-world situations, but it is important that students learn to be critical of graphs

and other representations of numerical data so that they interpret them correctly. In a quest to truly understand the reality of poverty in District X, and maybe even the United States as a whole, we will harness the power of mathematics to help describe and communicate data.

Big Idea (Pennsylvania SAS, n.d.)

> Relations and functions are mathematics relationships that can be represented and analyzed using words, tables, graphs, and equations.

Essential Questions (Pennsylvania SAS, n.d.)

1. How can we show that algebraic properties and processes are extensions of arithmetic properties and processes, and how can we use algebraic properties and processes to solve problems?
2. How do we decide which functional representation to choose when modeling a real world situation, and how would we explain our solution to the problem?

Cognitive Tools Used:

Search for authority or truth, meta-narrative, anomalies, sense of agency

Philosophic Planning Framework (IERG, 2008)

1. Powerful Underlying Ideas

In the United States, living at or below the poverty line is a distinction based on calculations of costs for basic requirements of living such as food, shelter, health care, and transportation. Poverty is a controversial issue because some believe that people should be able to work their way up and out of poverty, while others believe that those in poverty require assistance in order to improve the quality of their lives. Information about poverty is collected and represented in a variety of ways, all of which require understanding of algebraic concepts like graphing of variables for interpretation and analysis. Having the ability to critically review graphs, charts, statistics, and mathematical predictions is useful for determining if data are accurately reflecting reality or if there are exceptions in data that need to be considered. In addition, these skills also allow individuals to pose solutions to problems using available data.

2. Shaping the Lesson

2.1. Finding the meta-narrative: The lesson will start by viewing two video clips. One is entitled Tour Poverty USA: The Forgotten State (CCHD, 2009). This video demonstrates how the income defined as the "poverty line" is insufficient for a family of four to meet their most basic needs. The second video clip is from the feature film The Blind Side (Johnson, Kosove, & Netter, 2009). In this movie, a young African American student, adopted by a wealthy white family, is able to rise out of a life of poverty. Obviously, not every poor child can be adopted by a wealthy family; but this second video clip also discusses the low likelihood of success for minority children living in poverty.

2.2. Finding anomalies to the general theory: Although poverty is a condition that can create many challenges in a person's life, there are many people who rise out of poverty and manage to live lives of relative comfort. What factors can increase a person's ability to improve his living situation or income?

2.3. Presenting alternative general theories and meta-narratives: "Poverty is inextricably related to crime, substandard living conditions, and inadequate educational opportunity" (McCoy, p.456). How are these social factors connected to income? What statistics demonstrate a person's ability to rise above the poverty line?

2.4. Encouraging development of students' sense of agency: Start a discussion with students using the following questions:

- What kinds of support do you think a family living below the poverty line needs in order to increase their standard of living? Who should provide these supports?
- Do you think that the amount of money described in the Tour Poverty USA: The Forgotten State (CCHD, 2009) is enough? Realistically, how much more do you think the family would need?
- "How does your life relate to that of a family living below the poverty line?" (McCoy, 2008, p. 458).

2.5 Drawing on tools of previous kinds of understanding

Somatic Understanding: All of the questions in section "2.4 Encouraging development of students' sense of agency" could be used to appeal to student emotions on the topic of poverty.

Mythic & Romantic Understanding: Ask the following questions:

•What would your life look like if your family income was $150,000 per year?

•What do you think would happen to a person living below the poverty line if he/she won millions of dollars in the lottery? Is 10 million dollars enough to support a person for his/her entire life?

•What fears do you think people have when they are living below the poverty line?

3. Resources

The Internet and discussions with adults in their community are the main resources to initiate student research on the concept of the poverty line and the costs of everyday necessities. Students will first create a budget for a family attempting to rise above the poverty line. This budget should include proposed cuts to the current household spending and proposed sources of additional revenue

After discussing these budgets, students will conduct research on poverty in the United States and try to determine what conclusions are usually drawn from this type of data. Students will be encouraged to find anomalies, and investigate those outliers. The website for the U.S. Census Bureau (http://www.census.gov/hhes/www/poverty/poverty.html) should serve as the primary source for data. McCoy (2008) also mentions that data released by each school, for NCLB compliance, could be used to investigate the connections between poverty and student achievement.

In addition to the use of approved on-line materials, use of the class textbook and the instructor will guide students toward the appropriate use of the following concepts and skills: regression equations, correlation coefficients, mean, median, mode, percents, use of spreadsheets, and any other new calculations necessary for completing the unit.

4. Conclusions

Working in small groups (2-3 students), the goal will be for students to devise three methods of representing and describing numerical data, and be able to tell a story, make predictions, or refute a claim from the data. Students will present their story to the class at the end of the unit, so that the class can discuss the findings of each group. During the presentations, the class will be encouraged to discuss what the success and challenges are in each group's presentation. Critiques should focus on proper use of graphs, predictive power of regression equations, outliers, and how accurately statistics represent real-world data. Concluding questions from the instructor will be carefully selected to model the kinds of questions and content on the PSSA.

5. Evaluation

Evaluation of student learning will be conducted partially through the class presentations by each group. In addition, students will complete a brief written reflection to communicate their beliefs about how the use of mathematics concepts was helpful in their quest to find the truth about poverty. However, since the goal of this lesson is to increase student proficiency on the PSSA, the formal evaluation will be in the form of an open-ended PSSA question. PSSA questions that relate to the content in this lesson are available on the Pennsylvania Department of Education website.

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EDUtainment: Entertainment in the K-12 Classroom

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Introduction

Our children not only live within a fast-paced technological society that is bombarded by multimedia but are also surrounded by people with short attention spans and high levels of distractibility (Waterston, 2011). To keep students engaged, it is important that teachers observe the modern ways in which children learn and adapt their lesson plans accordingly. Children are attentive when being entertained. As a result, teachers must be open to the idea of *EDUtainment*, the fusing together of entertainment and education.

> EDUtainment /ejə tānmənt/ (n):
> 1. the byproduct of simultaneously educating and entertaining a student
> 2. an entertaining incentive that occurs in an educational setting
> 3. a philosophy and/or way of thinking that merges entertainment and education
> (Svencer, 2012, p. 5)

One way for educators to achieve *EDUtainment* in a school setting is through the use of technology. Music videos, virtual field trips, karaoke choreography, and conference calls are examples of practices that utilize technology to *edutain* students in the modern day classroom.

Music Videos

In 2010, Grammy Award-winning band OK Go teamed up with State Farm and Synn Labs to create a unique music video entitled "This Too Shall Pass – Rube Goldberg Machine version" (OkGo, 2010). The video showcases a continuous chain reaction of interconnected simple machines and inanimate objects synchronized to the band's song "This Too Shall Pass." The chain reaction occurs for almost four minutes while the band members move about and lip-sync the lyrics. Toy cars roll down inclined planes. A metal basket attached to a string wraps around a screw. Weighted pulley systems trigger levers and gears. Pianos are destroyed. Vintage televisions are shattered. Dominoes fall. And, among other things, the band members have paint shot at them from cannons. Envision the board game Mouse Trap with superpowers. Because of the video's advanced scientific content, it can easily be incorporated into a physics lesson on simple machines that requires students to identify all the simple machines included in the video, as well as discuss how each simple machine works.

Many music videos boast curriculum-based subject matter. Figure 1 outlines some additional examples of music videos that include content commonly taught in K-12 classrooms.

Figure 1

Content	Video Title	Artist
Classical Conditioning	*White Knuckles*	OK Go
Stop Motion Animation	*Awakening*	Switchfoot
Civil Rights	*The Sound (John M. Perkins' Blues)*	Switchfoot
Robotics	*Needing/Getting*	OK Go
Camouflage	*This Too Shall Pass – Official*	OK Go
Story Structure	*You Belong With Me*	Taylor Swift

Music videos account for many of the most viewed videos on YouTube (Setoodeh, 2010). Because of their popularity and easy access, teachers can effortlessly incorporate curriculum-based music videos into their lessons to enhance instruction, engage students, spur valuable discussion, and assist students in making connections to what is being taught (Rodesiler, 2009). For educators interested in pursuing music videos that can be used in their classrooms, countless popular music videos can be viewed on YouTube via the music tab. It should also be noted that sites like http://kidvideo.com allow videos from YouTube to be downloaded free of charge for personal use.

Virtual Field Trips

Many teachers have the ability to take vacations during the summer months. Vacations provide educators with unique opportunities to take pictures or videos related to a given curriculum. For example, footage of the wildlife, culture, and history for any locale can be obtained at almost any destination. With free and intuitive movie editing programs like Windows Movie Maker and iMovie, the footage can later be edited to create a virtual field trip for use in the classroom. Virtual field trips are an engaging and cost-effective way to help students make real-world connections to what is being taught (Tuthill & Klemm, 2002).

Karaoke Choreography

Movement, motion, music, and scrolling lyrics can provide teachers with an opportunity to reach out to all learning styles as well as provide students with a point of reference to reflect upon for recalling sought after information in the future. Dance and movement have been proven to be effective instructional tools amongst young children and college students (Samuelsson, et al., 2009; Schultz & Brackbill, 2009).

The first step to incorporating karaoke choreography into one's classroom is finding an educational karaoke video that can be used as part of a lesson. The second step is creating motions and movements to coincide with the song lyrics in the video.

For teachers uncomfortable with creating choreographed movements, students can be recruited to help create the motions. The following websites contain educational karaoke videos with modern sounding beats and melodies:

- www.StudyJams.com

- http://flocabulary.com
- www.TeacherTube.com
- http://havefunteaching.com

On the StudyJams site listed above, the song entitled "Types of Lines" lends itself to many choreographed movements. The chorus is as follows:

> Horizontal lines – straight left and right
> Vertical lines – up and down to the sky
> Intersecting lines – cross all the time
> Parallel lines – never touch the other lines
> Perpendicular lines – intersect at right angles
> (Scholastic, 2010)

To demonstrate horizontal lines, students can hold their right and left arms straight out from their sides. For vertical lines, students can jump up and down like a rock star while pointing upward with a "fist pumping" motion. To showcase intersecting lines, students can cross their arms in front of their chests. To demonstrate parallel lines, students can place their right arms four inches above their left arms, horizontally in front of their chests. Lastly, to show perpendicular lines, students can cross their arms at right angles in front of their chests. The aforementioned choreographed dance can be viewed via a video entitled *Karaoke Choreography "Types of Lines"* at http://www.YouTube.com/EDUtainment23.

In addition to teacher created karaoke movements, students can create their own songs and motions by using free programs like iMovie in combination with GarageBand or Audacity in combination with Windows Movie Maker. Both teacher and student creations can be video recorded and saved for implementation in the future.

Conference Calls

In addition to teachers' personal contacts, the World Wide Web makes it very easy for educators to connect with experts closely linked to their topics of instruction (Howard-Kennedy, 2004). As a result, teachers can create opportunities for students to engage in meaningful conversations with specialized experts by way of conference calls.

Over the past decade, carrying a cell phone has become routine for professionals. Therefore, it is possible for educators to connect with an expert in almost any part of the world at any time. Calling an expert in the field of what is being taught makes learning real, fun, and relevant for students. For example, before teaching about the various natural resources of Alaska, a teacher can set up an appointment with a contact in Alaska prior to teaching the lesson. Before making the call, an educator can ask students to formulate higher-level questions for the expert. After the questions are created, the teacher can then activate the speakerphone setting on her cell phone or plug computer speakers into the headphone port of the phone, and hold a student-led conference call at the scheduled time.

Many cell phones also have the ability to perform video calls. Free videoconference sites like Skype can be used to carry out videoconference calls with students ("Schools Look," 2009). An expert can be on his cell phone while students observe the expert in his locale by means of a shared interactive whiteboard or computer screen. In short, conference calls help students make real-world connections to what is being learned and are an engaging instructional strategy for the modern day teacher (Revere & Kovach, 2011).

Conclusion

The world and the ways in which people learn are ever changing. It is no secret that individuals are more engaged when being entertained. For that reason, to hold student interest, it is important for educators to evolve with their progressive technological world by combining entertainment and education in the classroom. Music videos, virtual field trips, karaoke choreography, and conference calls are several methods teachers can use to accomplish *EDUtainment* in a school setting.

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Belonging and Its Impact on Student Achievement

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Introduction and Purpose

When the No Child Left Behind Act (NCLB) pushed the educational world into the age of accountability, high-stakes tests became the tools to measure the adequate yearly progress (AYP) of schools and school districts. They also became the gauge districts used to determine the effectiveness of each school within the district. The school district, where this study took place, was no exception. At the beginning of each school year, the progress of individual schools was presented to the district administration and faculty, and schools that achieved the highest percentages of students demonstrating academic proficiency were commended. Within this group of celebrated schools were the district's two smallest elementary schools. Each year these schools were praised for their improving test scores.

As both schools served the district's highest percentage of economically disadvantaged students in outdated buildings, the high level of achievement generated questions among the district administrators. What was happening in these schools that might be different from the other elementary schools? The goal for the year was to study these schools to find out just what might be producing these results. The purpose of this article is to discuss the findings of the study and to present the findings of student achievement and its relationship to school size, a sense of community, and socioeconomic status.

Conceptual Framework

The two schools in this study differ from their district counterparts in that they have the highest percentage of economically disadvantaged students, are small schools with only one classroom for each grade level, are the oldest buildings in the district, and have small faculties. Both schools are also demonstrating a high level of student achievement. For these reasons socioeconomic status (SES), school size, and a sense of community as they pertain to student achievement form the constructs of this study. As each one construct contains a variety of facets, each one will be briefly defined and examined before looking into their connections to this study and student achievement.

Socioeconomic Status

Various research studies have been conducted showing a connection between students' socio-economic status and level of achievement. White's (1982) meta-analytic study, a literature review of works published before 1980, examined the connection between socioeconomic status and student achievement. The studies in his analysis pointed to a stronger correlation existing between SES and student achievement at lower-grade levels.

Coleman (1988) suggested the socioeconomic status of a student's family has a strong influence on his or her achievement. He attributed this phenomenon to the resources that are provided at home, as well as the impact the family has on the student's attitude toward success in school. Wenglinsky (1998) contended that schools in low SES areas as compared to those in higher SES areas differ in terms of materials, instruction, teacher experience, and ratio of teachers to students. Watkins (1997) proposed a relationship between the socio-economic status of the family and their interactions with the school.

Recent national studies corroborated the influence of students' socioeconomic status on their achievement levels (Aikins & Barbarin, 2008; Lewis, 2008; Mason, 2007, Sirin, 2005, Weber, 2005). Sirin's 2005 meta-analysis reviewed the literature from 1990 through 2000 and compared that literature to White's 1982 review. Sirin (2005) concluded that there is a trend toward lower correlations between SES and student achievement. He suggested one reason for this might be changes in research in the area of SES and achievement: "Unlike the earlier research, which conceptualized SES as a static phenomenon, recent research emphasizes a contextual developmental approach to both SES and school performance" (p. 442). He pointed out that earlier research focused mostly on the father's economic status, whereas more recent research includes information about the mother's and the father's earning capacities. Another factor may be students' "increasing access to learning materials such as books, TV, and computers, as well as the availability of compensatory education" (p. 442). His meta-analysis also maintained that the minority status of a student and the geographical location of the school play an integral role when researching students' SES and academic achievement: "Socioeconomic status was a stronger predictor of academic achievement for White students than for minority students. The more minority students in a sample, the weaker the association between SES and achievement" (p. 441). When a school is located in an urban setting, where there are usually higher concentrations of minorities, the SES-achievement relationships are not as strong.

School Size

Various researchers have found that a smaller school size may be an advantage to overall student achievement, especially for disadvantaged students (Diaz, 2008; Friedkin & Necochea, 1988; Howley, 1996; Huang & Howley, 1993; Lee & Loeb, 2000; Semel & Sadonvik, 2008; Walberg & Walberg, 1994; Weber, 2005). Friedkin and Necochea (1988) were the first researchers to formally investigate the hypothesis of school size and its effects on student achievement. In their California study, they found that larger schools have positive effects for affluent students, whereas a smaller size is aligned to positive effects for the economically disadvantaged students.

WestEd's Policy Brief (2001) noted, "A 1996 analysis of 103 research documents concluded that achievement in small schools – especially for poor and minority students – is at least equal and often superior to that in large schools" (p. 1). The brief added, "Smallness alone does not automatically translate to effectiveness. In fact, when small schools act like large ones – e.g., retaining departmental structures – little improvement is likely" (p.2).

Recent national studies have continued to support the influence of school/district size on student achievement, especially for the impoverished (Lewis, 2008; Mason, 2007; Sirin, 2005;

Weber, 2005). Lee and Loeb (2000) reported teachers in small schools were better able to know their students: "By knowing students better, teachers are likely to worry more about their [students']failures, provide more help directed toward improvement, take responsibility for disciplining everyone, and invest more fully in improving the whole school" (p. 23). Weber's (2005) study added that small school size matters for all economically disadvantaged students, and achievement increases for advantaged and disadvantaged students.

Sense of Community

Dewey (1958) argued the quality of education "is realized in the degree in which individuals form a group" (p.65). In order to be a member of the group, one must feel part of the group. He insisted that it is the responsibility of the school and its teachers to foster this sense of community. Learning occurs only through the collaboration and the interaction of all group members, teachers and students.

Osterman (2000) discussed the experience of belonging. She explained that belonging "is an important factor in understanding student behavior and performance" (p. 325). She added that students need to feel secure and connected "with others in the environment and to experience oneself as worthy of love and respect" (p. 325).

A sense of community or belonging is also important for faculty members. Newmann et al. (1989) maintained, "A sense of community conveys a relationship of unity, belonging, and cooperative interdependence among peers that can counteract the fragmentation of work and social isolation" (p. 223). They also attributed higher achievement to a strong sense of community. Studies by Rosenholtz (1985) and Chubb (1988) revealed an increase in student achievement when faculties were able to come to consensus on academic goals.

In a recent study Hopkins (2005) discussed the positive impact of social capital on student achievement in smaller communities. She noted, "Social capital is defined by Coleman (1987) as the social networks, the interactions between children and adults within the family and within the community" (p. 26). When students feel they belong and the adults in the community care about them, the social capital increases; this belief adds to a stronger sense of community.

The Research Design

Phenomenology is the underlying perspective for this qualitative study. Cresswell (1998) refers to qualitative research as a process of inquiry used to investigate a social or human dilemma. Denizen (as cited in Cresswell, 1998) tells us that it is the researcher's responsibility to interpret the phenomena through the meaning of others. In order to understand the quintessence of the lived experiences of others, one must go into their world, listen to their words, and see how they have come about their interpretations (Patton, 1990). "What did these teacher encounter?" and "How did they make meaning of these experiences?" are the questions that drive this study.

Methodology: Data Collection and Interpretation

Both group and in-depth individual interviews were conducted. Patton (1990) stated that the purpose of such interviews "is to allow us to enter into the other person's perspective"

(p.196). The group faculty interviews were conducted at each building. Park Elementary had eight participants, and 11 educators participated at West Elementary. These interviews helped to determine the focus of the individual interviews, which centered on the teachers' experiences while working in the small non-departmentalized elementary school. The questions specifically focused on instructional practices, school culture, leadership, and community relationships. Follow up interviews were held, when needed, to solicit clarification or to expand on emerging themes. All interviews were audio taped with the interviewees' permission. The context for these interviews will be further explained later in this article.

Data interpretation began after the first group interviews. When the transcripts were completed, they were analyzed for significant statements, items that needed clarification or expansion, and emerging themes. The transcripts were approached as inductively as possible to ensure that the interviewer "come to the transcript prepared to let the interview breathe and speak for itself" (Seidman, 1998, p. 100). After various readings of the transcripts and the marking of passages of interests, items were categorized and the connective threads became apparent.

The analysis was started by placing the data into smaller units. Strauss and Corbin (1990) term this "open coding." Lincoln and Guba (1985) state that in order to classify something as a unit it must fulfill two criteria - it must be relevant to the study and it should have meaning when it stands alone. After the open coding process, axial coding was utilized. Strauss and Corbin (1990) define axial coding as organizing the data in new ways by finding the connections between the categories. To accomplish this, each unit was reread to look for categories that overlapped and those that were no longer relevant. At this point new categories emerged, and others were eliminated. The data were finally organized into these four categories: instructional practices, relationships, communication, and leadership.

Context

The research sites are two small elementary schools within a middle-class suburban school district located in Pennsylvania. The district has an enrollment of approximately 5,700 students with only 14% of the population considered to be economically disadvantage. There are seven elementary schools, two middle schools and one high school. The district scores relatively well on the state tests. The most recent test data show that 80.6% of the students scored proficient in reading, and 84.9% reached proficiency in math. The district class size average is 16. White students make up 80.6% of the population, 7.2% are Black, 8.1% Hispanic, and 3.9% are listed as Asian/Pacific Islander (SchoolMatters, 2009).

The schools that were chosen for this study are Park Elementary and West Elementary. These schools became the subject of this study for two reasons: their relatively high and improving state assessment (PSSA) scores and their higher number of economically disadvantage students (based on free and reduced lunch).

In 2008, Park Elementary school scored 93% proficient/advanced on the state math assessment and 89% proficient/advanced on the reading assessment. Twenty-four percent of their population was listed as economically disadvantaged. West Elementary school scored 96% proficient/advanced in math and 74% proficient/advanced in reading. Their economically

disadvantaged population is listed at 36%. Both schools increased their state assessment scores in 2009. Park Elementary scores rose from 93% to 95.1% proficient/advanced in math and from 89% to 91.9% in reading. West Elementary scores moved from 96% to 96.2% in math and from 74% to 92% in reading. In 2010, Park Elementary had a slight dip in scores. In math 90.6% of the population scored proficient/advanced and in reading, 83.6%. West Elementary increased their math scores to 96.7% proficient/advanced and scored 86% in reading. The percentage of economically disadvantage students remained consistent at both schools over this time period.

The two schools have similar grade structures. Each building contains one classroom for each grade level. The students have the same teacher for each major subject: language arts, math, science, and social studies. Both buildings share the same principal.

Park Elementary was built in 1948 and has six classrooms, grades one through six. Additionally, the building utilizes an art/music room, library/media center, and a computer lab. West Elementary School was built in 1936 and had an addition constructed in 1961. Nine classrooms house grades K-6, an art/music room, and a computer lab. Both buildings have an all-purpose room that serves as the gymnasium, auditorium, and cafeteria and neither building has air conditioning. Both schools have the motto, “Small School, Big Hearts.”

The faculty at Park Elementary is a veteran staff ranging from 10 – 30 years of experience. The faculty at West Elementary is a young group of teachers with the majority of the faculty having fewer than10 years of experience. Both schools have received the Pennsylvania Department of Education Achievement Recognition each year since its inception. West Elementary School also received the Distinguished Title I School Award for Math in 2008.

Results

Although both buildings have unique qualities, commonalities that have had an impact on the student achievement did arise. The small school structure and their deep sense of community were the strongest factors that emerged from the analysis of the data.

Small School Structure

Both Park and West are elementary schools with a “one-deep” structure; that is, there is only one classroom for each grade level, which differs from the other five elementary schools in this district. There are 209 students in grades K-6 attending West. The class size averages 22-23 students, but may be as small as 15 and as high as 30. Each classroom teacher is responsible for teaching Language Arts, Mathematics, Science, and Social Studies, all of the major subject areas, to all of his or her students. At the other elementary schools in the district, departmentalization occurs in grades 4-6. Everyone teaches language arts to their assigned students, but students switch classrooms for math, science and social studies.

The teachers at both Park and West Elementary schools expressed their strong preference for teaching all of the subjects. They maintained that this structure allowed for better differentiation, remediation, and extensions to learning. During the group and individual interviews, the teachers often mentioned the flexibility this structure allotted them. When more time was needed for a lesson, they did not have to end the lesson because another group of

students was waiting; instead, they were able to continue with the lesson until they believed the objectives had been met for that day. One teacher reflected:

> It's a building where we have no pressure to keep up with anybody else. We don't feel like that. Oh, I have to this because that's where we as a team are - because I am the team. So if I need to do 80 minutes of math today, then I'll adjust it from something else. (Steve, Interview 2, Line 741-743)

Another teacher added:

> There is no restriction on your time limits. Say I'm doing adding fractions and I notice that some kids aren't doing well, but yet I know in five minutes I'm supposed to transfer into reading. I don't have to go to another class. I don't have another group coming in for another math lesson or the same math lesson just a different class so that I have to say "we're done here." I can extend it if I want, I can extend math an extra 5 or 10 minutes. Yeah I'm cutting into my reading time, but I've got that flow going with my math lesson. You don't understand it yet; well maybe if I do three or four more problems on the board they're going to get it. But if I'm in that time constraint of "oh there's another class coming in of math" then I got to stop and pick up again the next day or just have them go onto the next lesson depending on how far behind I'm in my math lessons. Yeah and that changes year to year. Last year I had math whizzes and they just got it and this year it's different. This year I'm spending more time on math and I'm further behind. Last year I had to spend more time on reading and you have the opportunity to do that and you can be very flexible here. (Bill, Interview 1, Lines 374-385)

By teaching all major subjects, teachers indicated they gained a better understanding of their students' strengths and weaknesses in all areas, thus enabling them the ability to adjust instruction to the students' needs. "You really get a sense of those students you teach. You can concentrate on them, on the 23 I have, rather than having your attention divided among 60 [students]" (Alison, Interview 2, Lines 754-755).

The teachers in both schools also believed the lack of departmentalization was a benefit. They explained how teaching all subject areas provided them the opportunity to spiral their curricula and interconnect subject areas. All teachers in this study remarked how beneficial it was to know exactly what had been taught in each subject area and what would be taught in upcoming lessons so that they could reinforce important concepts throughout the day:

> I would say that it is easier [being the only 5th grade teacher] because you know what you are teaching in every subject. So I can carry it through, so if we are talking about cause and effect in reading and it ties in with science I can bring that in with it. Yes, it is easier because you know what you are teaching in every subject (Amy, Interview 2, Lines 803-807).

Since Park and West Elementary schools only have one teacher for each grade, there is no opportunity within the buildings to have any horizontal articulation at each grade level. The other elementary buildings have grade-level team meetings on a weekly basis. The teachers of Park and West Elementary are provided substitutes to meet with their colleagues, but these

meetings take place only once or twice a year. The teachers do have the opportunity to meet monthly with their grade-level colleagues at the district level. When asked how they felt about not have a grade-level peer with whom to collaborate, their responses varied. A few teachers lamented the lack of grade-level teams, but most teachers commented that they were part of a building team, a larger team. "I think here we are more of a team through the grade levels." Another teacher added, "I don't have another 6th grade teacher, but I do have a 5th grade teacher and I converse with him a lot about what his kids were able to do last year"(Bill, Interview 1, Line 385). The teachers felt that although they may be lacking the horizontal articulation opportunities of the other buildings, they had a greater understanding of the vertical articulation between the grade levels. One teacher elaborated more on their ability to collaborate vertically:

> Since we don't have that opportunity [grade-level teams] we collaborate vertically. We'll look to the grade that was before us and see if, well what did you do and what areas did you find as strengths and weaknesses so that we can address those and then we will go up to the next grade level or up to the next two grade levels and see well we're doing this and how is that going to tie in with what you do? (Sue, Interview 2, Lines 584-587)

Although most of the teachers talked about the benefits they felt being in a small school, there were a few times when they bemoaned not having grade-level colleagues in the same building. A veteran second-grade teacher commented:

> There are times when you feel I just wish I could run over next door and say okay I'm having trouble teaching this concept. You know, what are you using? What tricks are you using? But we do bounce it off grade level wise too at our monthly meeting. (Sue, Interview 1, Lines 581-583)

A third-grade teacher talked about a few of the challenges when working in a small building:

> I think you need a certain level of confidence to be able to work in small buildings. You have to feel confident in your ability because it's not like you can work on a team. You really have to be able to lead yourself and maybe just check in with other people and I don't know if that that would be for everybody (Alison, Interview 1, Lines 576 – 581).

Overall, the teachers felt they were able to better reach their students in a small school. They had fewer time constraints, they were better able to interrelate and spiral the curriculum, and they felt they knew their students' strengths and weaknesses and were better able to address them.

Sense of Community

The teachers in this study experienced a strong sense of community or belonging to the schools where they taught. Many teachers used the word "family" to describe environment. A first-grade teacher described her feelings:

> As a first year I think that it is been wonderful, such an extremely supportive environment. Everyone kind of works together no matter what. We can ask

> questions of anybody. It is a family environment, community. Everybody helps everybody. I don't know - student teaching in some of the bigger buildings [in this district] and working in the other buildings was different, here it's definitely more of a family feel (Caitlyn, Interview 1, Lines 339-341).

Another teacher added, "I think the kids have more of a commitment to us because they see the same faces all the time. They feel close to us. We're a family" (Sue, Interview 1, Lines 551-552).

The family environment that was developed in these small schools was experienced not only by faculty, but also the students. A fifth-grade teacher explained how she felt the close relationships established in such a small school attributed to the positive working relationships in her classroom:

> Most of my classes have been together since first grade and they have become like a family with each other and they know about each other's lives and what has happened to them the year before like a parent just passed away and they know that and they're sympathetic to that, they're helpful to each other, they don't pick on each other. They're almost like a little family in the way that they help each other and work together (Kim, Interview 1, Lines 444 – 447).

The community of teachers pointed out over the course of this study that even though their students felt a strong sense of belonging, this was not enough. They maintained that feeling this bond with the community in combination with high teacher expectations was what motivated the students to do their best. A sixth-grade teacher reflected:

> We have high expectations for our kids right from the get go. It's like you get down to business and we expect a lot out of you [students] and we expect you to work hard and I think that carries over to them feeling like I know I need to work hard because I don't want to disappoint the teacher (Bill, Interview 1, Lines 475-478).

A fifth-grade teacher added that the comfort level of the students in this school added to their desire to perform well in the classroom:

> They feel comfortable coming to school. Some of these kids come from single-family homes or from broken homes. It gets to the point where some kids are like "I want to be at school. I want to work hard and I feel good here." So that transfers into how well they do in the classroom (Amy, Interview 1, Lines 489-492).

The fourth-grade teacher pointed out:

> There are kids that are waiting for the doors to open for breakfast and are here for after school tutoring or homework help until 3:30 or whatever. They just want to be here. I think that the staff feels the same way. I know I don't want to leave at the end of the year [she is a long term substitute]. It's just that kind of place that you feel comfortable coming to (Jena, Interview 1, Lines 498 -496).

The feeling of community is not only sustained by the faculty, but is also promoted by the mere size of the building. In Park Elementary, all of the classrooms are located on one floor. The teachers talked about how this allowed them the opportunity to be in contact with everyone everyday. "When you come in the morning you just have to stand in your doorway and you can see everyone, everyone" (Alison, Interview 1, Lines 544 – 555). Another teacher added, "We can touch base with all kids. We can have an open door policy too. You can go up to any student and ask how he is doing. You only have to walk down one short hall" (Kim, Interview 1, Lines 541-543).

In both schools the support staff felt that they were also a welcomed part of the school community. A math support teacher, who travels between the small schools and a larger school in the district, commented:

> It's very inclusive from the cafeteria staff to the support staff. Everybody is treated very much the same. We are equals. Everyone is included in everything we do. This week we had lunch and it was lunch for everybody. It's not the upstairs group and the downstairs group type thing. There's not the support staff and then the teachers. We are all even. (Alison, Interview 1, Lines 557 – 560)

Discussion

Although the findings support other research conducted with SES, smaller schools, and student achievement, they are not generalizable to other small elementary schools. In interpreting the findings of this study, it is important to remember that the results represent a qualitative case study in two small elementary schools in a suburban district.

As stated previously, this study took place in two suburban elementary schools. Both schools had the highest percentage of economically disadvantaged (ED) students measured by the number of students who were eligible for free or reduced lunch prices. Both schools also demonstrated high levels of achievement over a three-year period on the PSSA, Pennsylvania's System of School Assessment. Various studies suggested students' from low SES struggle more in school (Aikins & Barbarin, 2008; Coleman, 1988; Lewis, 2008; Mason, 2007; Sirin, 2005; Watkins, 1997; Weber, 2005; Wenglisky, 1998; White, 1982). This outcome however, has not been the case with these two schools. Although both schools have a relative high percentage of economically disadvantaged students, they also have a very high percentage of students reaching proficiency on the state assessment over the past three years.

Recent national studies have found that a smaller school size may be an advantage to student achievement and that it is especially beneficial for disadvantaged students (Diaz, 2008; Friedkin & Necochea, 1988; Howley, 1996; Huang & Howley, 1993; Lee & Loeb, 2000; Semel & Sadonvik, 2008; Walberg & Walberg, 1994; Weber, 2005). This study supports their findings as the disadvantaged students in both Park and West are scoring very well on the state assessment and attend small schools.

This study also supports the findings of Newmann et al. (1989) and Lee and Loeb (2005), who suggest student achievement may increase when teachers feel a strong sense of community. Lee and Loeb (2005) purport teachers in small schools are better able to get to know their

students. This connection causes them to feel more invested toward their students and the school in which they teach. The teachers at Park and West commented many times throughout the interview process that they feel like a family. This sense of family and connectedness may be a factor that is influencing the student achievement at both schools. As one teacher comments, "We expect a lot out of you [the students] and we expect you to work hard and I think that carries over to them feeling like much is expected of me, I know I need to work hard so I don't want to disappoint the teacher" (Sue, Interview 2, Lines 10-13). Hopkins (2005) refers to the feeling of not wanting to disappoint teachers as "social capital." She contends social capital is increased when students feel they belong and are cared for by the adults in the community and maintains that when strong social capital exists, student achievement is enhanced.

Hargreaves, Earl, and Ryan (1996) described departmentalization as being associated with academic rigor as well as depersonalization. Other researchers argued that departmentalization limits the opportunities for students to continually and cooperatively interact within a classroom (Siskin & Little, 1995). Park and West Elementary are the only two elementary schools in the district where the classroom teacher is responsible for teaching all major subject areas: language arts, math, science, and social studies, at all grade levels. Neither school is departmentalized. As the teachers in this study point out, this allows them the flexibility to adjust their teaching schedules to better meet the students' needs. It also allows for more interdisciplinary teaching. These teachers did not feel that rigor suffered by not departmentalizing. They did support the idea that the organizational structure of these two schools allowed for more interactions among their students throughout the day. The structure of the teaching schedule at Park and West may be another factor influencing the academic achievement.

Implications for Theory and Practice

This study contributes additional support to the research regarding the effects of smaller schools and sense of community on academic success for economically disadvantaged students. The success of the economically disadvantaged students in these two schools started in 2006 and continues today. Both schools have nearly eliminated the negative relationship between low SES and achievement.

The question now is this: Can the small school structure that has enhanced the sense of community in the schools in this case study be replicated in larger elementary schools? Administrators might consider dividing their buildings into four distinct K-5 teaching teams. Each team would occupy one hallway or part of a hallway in the school. The teachers would be responsible for teaching the four major subject areas to their students. The students would be placed into heterogeneous cohorts in kindergarten and would continue as a cohort through grade five. The teachers would remain as a vertical K-5 team. This structure would recreate the current organization at the case study schools. It would create a small community of teachers that would get to know all of the students and parents of the small cohort. This structure would allow flexibility with the time spent on lessons. It would also provide the vertical articulation that the case study teachers felt strongly about, and it would allow for horizontal articulation across the grade levels, which is missing at the case study schools.

Further studies must be conducted to see if the achievement patterns found in this study hold true in other schools with this organizational structure. Teacher efficacy and the effect of leadership also need to be added to the equation. Does teacher efficacy, the belief that one can motivate all students to achieve academically, have a snowball effect? As the teachers in this study realized the effects of their work, did their instruction improve? The other factor that needs to be studied more is the leadership style of the principal's and its impact on teacher efficacy and school climate.

This was a modest case study of two small elementary schools. The student achievement in these two schools over the last three years has been outstanding and shows that even students with low SES status can achieve.

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About the Author

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Cyberbullying: One Issue, Two Points of View

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"Any technology tends to create a new human environment."
Marshall McLuhan

Purpose

The purpose of this article is to discuss cyberbullying from two points of view in order to contribute to a better and broader understanding of the problem and explain some possible solutions for stakeholders in the field of education. One of those points of view marries the experiences of the educator/parent. The other, both more rare and valuable based on the review of the literature, describes the point of view of the cyber bullied student/daughter. Because both points of view come from a mother/daughter team, the cyberbullying experience will be boldly candid and truthful. It will offer a real peek into family dynamics when those dynamics are unabashedly stricken with the malice that accompanies cyberbullying. The authors believe it is only through such candor that a truer understanding can develop about this very dangerous social venom. In truth, cyberbullying is venomous and the consequences can be dire. But if the large group of stakeholders comes to have the proper education, communication and understanding about this huge technological social issue, then the bullied will find hope and proper strategies for success.

Introduction of the Mother

Throughout my career, I have experienced the trials and tribulations of school administration from a variety of vantage points: at the building level via the principalship, at the central office level through the responsibilities inherent with two different positions there and finally via the superintendency. Because my career progressed at a consistently aggressive pace, issues surrounding cyberbullying arose in one way or another in each position, growing in frequency at a pace commensurate with my career ladder. I was able to see the situation from a variety of administrative vantage points. However, none of my professional experiences prepared me or taught me about the phenomenon of cyberbullying to the degree that motherhood did.

Motherhood: certainly my favorite, proudest and most challenging lifetime position. My husband and I are the proud parents of an only child, our daughter. We were thrilled with "our little girl" who grew up with two working professional parents. Fortunately for her, my school district of employment was not her school district of attendance. As all parents reading this know, there is no graduate program in the Universe that can prepare you for parenthood; life is its own school. Regarding cyberbullying, parenthood was my post-Doctoral degree.

Introduction of the Daughter

As an only child, people often ask me if it was lonely growing up. To this I answer with a very loud, "No!" I consider myself blessed to come from a small but loving family, who perhaps overindulged me at times (I loved it!). This paper is the first project of this type I have worked on with my mother, but given the topic and our experiences, we both agree it is a message worth sharing. Although it was a few years before I could understand her adult perspective, I most certainly can see both sides now. My mom and I believe we can provide information to fill a knowledge gap that exists so students who are like me can be helped in a manner that is better and more meaningful by the educators who may be reading this. The adults who surround those students need to come to understand that all is not always as it seems in the mind and heart of a cyber bullied kid. My mother and I will present this very important and ever-growing issue from two points of view in order that our painful life lessons may help others.

Definitions

Before we can understand fully how to deal with cyberbullying, we must have a thorough knowledge of what it is. Hinduja and Patchin (2010) remind us that it is "willful and repeated harm inflicted through the use of computers, cell phones and other electronic devices" (p. 1). We have learned through our experiences that students **must understand** that cyberbullying is repeated. Generally, if someone is "mean" to you one time and one time only, that is not cyberbullying. I (the daughter) have found it is important for students to understand this distinction: a one-time incident does not a cyberbully make. Daniel (2005) portrays the cyberbullying with more impact:

> Cyberbullying is deviant behavior on the computer and the Internet as technology increases. Deviant behavior, when using computers and the Internet, includes the same types of deviant activities performed before the popularity of computers or the inception of the Internet. These activities include…spreading rumors about another person on the Internet, intimidating, stalking and frightening another person on the Internet… With the use of technology, students have advanced to cyberbullying and cyberstalking. Students are using e-mail, Websites, instant messaging, chat-rooms and text messaging to antagonize and intimidate others. (p. 19)

The last important component of cyberbullying is indicated by the National Science Foundation (2010), "Bullying, meanwhile, refers to aggression where there is also an imbalance of power and repetition of the act; or a 'systematic abuse of power.'" We learned through our experiences that it is useful for students to understand that there is a power imbalance involved in cyberbullying. It seems that this component, even more than some others, is easy for them to grasp and makes the process more relatable.

Over three decades in education, more than half of those years in school administration, and I can honestly attest to the fact that I dealt with few discipline problems that were labeled "bullying" in its purest form. Perhaps that is the beginning of the cyberbullying dilemma. Is defining cyberbullying as "old fashioned bullying" but now online, useful? In my experiences at least, there were few "bullies in the school yard." We had altercations, threats, food fights, bomb scares and a myriad of other disciplinary infractions. But we did not label many as "bullies" outright in and of themselves. It was no wonder when (depending on my administrative role at the time) neither a teacher or a principal would come to me in desperation, exaggeration or aggravation to tell me Student A was caught texting inappropriate, rude and demeaning content to

Student B during class and then labeled their concern "cyberbullying." Never. Their issue was disrupting class or causing a ruckus on the bus or getting the students unsettled on the day a substitute teacher was present. We must first understand and agree that cyberbullying is a serious offense and Daniel (2005) is on target when she describes it in her article as "deviant behavior." In the school culture it is important to call a spade a spade.

Burnham, Wright and Houser (2011, p. 5) offer several reasons that cyberbullying differs in a significant way from what many refer to as traditional bullying. They are as follows: technology allows for cyberbullying to reach an infinite audience; cyberbullying is frequently anonymous; harassment is often an element; cyberbullying messages and images also can be distributed quickly to a wide audience; and cyberbullying can be done at all times an in almost all places. (p.5) It is important to understand that the elements of invisibility and anonymity are components of cyberbullying that complicate its definition, its application and its identification.

While there are adults-parents and educators alike, who are just at the beginning of their learning curve about cyberbullying-research, at least to some degree, is marching on. Siegle (2010) has identified eight different forms of cyberbullying and it serves us well to become familiar with them. (It is very likely our students already know what they are.)

1. **Flaming**: Online fights using electronic messages with angry and vulgar language.
2. **Harassment**: Repeatedly sending nasty, mean and insulting messages.
3. **Denigration**: "Dissing" someone online. Sending or posting gossip or rumors about a person to damage his or her reputation or friendships.
4. **Impersonation**: Pretending to be someone else and sending or posting material to get that person in trouble or danger or to damage that person's reputation or friendships.
5. **Outing**: Sharing someone's secrets or embarrassing information or images online.
6. **Trickery**: Talking someone into revealing secrets or embarrassing information or images online.
7. **Exclusion**: Intentionally and cruelly excluding someone from an online group.
8. **Cyber stalking**: Repeated, intense harassment and denigration that includes threats or creates significant fear. (p. 15)

Adolescence

Those of us who have chosen to devote any part of our professional careers to educating middle level learners are to be lauded for our patience, our creative spirit and the special love we hold in our hearts for these very special people. Those who do or have worked with that population understand that period of life between childhood and adulthood is a unique time in human development that requires its own unique teaching and learning environment. Not surprisingly "drastic biological and social changes experienced by adolescents" (Li, p. 1) can lead to high frequencies of school violence including cyberbullying.

> Specifically, the rapid body changes associated with the onset of adolescence and change from primary to secondary school initiate dramatic changes in youngsters' peer group composition and status. Changes in peer group availability, individuals' status with groups, and peer support confront youngsters as they are entering new, larger and typically impersonal secondary schools. One way in which peer status is achieved in these sorts of environments…is through the selective use of aggression and other antagonistic strategies. (Li, 2005, p. 2)

And so we find the perfect storm: adolescence combined with cyberbullying. Burnham, Wright, and Houser validate this phenomenon.

Cyberbullying has been found to be especially distressing during adolescence because of dangers, threats and risks while interacting with technology. For example Shariff (2004) focused a study focused what youth encounter while online, reporting that online interactions regularly included bullying, stalking, sexual solicitation, and exposure to pornography. She also noted that youth tend to present risky behavior online. As one student reported, "Over the Internet you don't really see their face or they don't see yours, and you don't have to look in their eyes and see they're hurt." (Shariff, 2004, p. 224)

The Daughter's Hell

Although I was not thinking of it this way at the time (that is, who was or was not seeing the hurt in my eyes), I was indeed hurt--painfully so. I carried my anguish with me in my silent hell of middle school for two years, and I told no one. I was a good student; more specifically, I was an A student. The technology du jour was Instant Messaging. I could not avoid my few good friends who communicated in this fashion, so there was, I believed, no escape from the other students who used this medium to attack me. My friend did it, so I did it. On the outside, I supposed I looked regular enough. I took piano and dance lessons. I played the clarinet in the middle school band. I was what teachers would report at parent-teacher conferences as a "model student": I was quiet, caused no trouble, did all my work well and in a timely fashion, had excellent attendance and a supportive family. From the adult perspective on the outside looking in I was every teacher's dream student. But there was a small group of my peers who were also on the outside looking in, who saw me differently, *and who took advantage of what they saw*. Then they shared their opinions of me regularly—mostly daily—and I had no idea what to do but to read and believe their barrage of negativity. Middle school was presenting its own trauma for me. I had the beginnings of acne as my hormones were behaving just as they should with girls my age. Of course, I did not care about any logical explanatory talk regarding my body's development. I wanted my skin to clear up immediately as my "ugly bumpy face" was a cause for humiliation. I had a "unibrow" which I thought was truly mortifying because I was not yet permitted to tweeze my eyebrows. I wore glasses and "four eyes" seemed to be some type of sin because the eye doctor suggested I wait until ninth grade to attempt contact lenses. I loved music and had started studying the piano in first grade. Since there was no piano in band, I chose the clarinet. That, evidently, made me a "geek" and a "nerd" and added to my "ugliness." I read these comments about how ugly I was nearly every day for two years of my life. Although I have no idea what effect these words have on you as a reader now, as a seventh grader I was devastated. I felt horribly alone, bereft, and probably worst of all, *I believed* what these monsters were communicating to me. Looking back from my current vantage point, I can understand the complexities of growing up, the developmental angst of living through those early teenage years. But if you are going to take anything from this written work, please understand the heartache and loneliness that was my burden and of which I felt there was absolutely no escape. When I read of those poor children who are berated and bullied to the point of suicide, there is a level to which I understand their agony. I was one of the lucky ones; my torment did not take me to the point of taking my life.

The Silence Is Broken

My daughter and I did not have one of those relationships while she was in public school that I periodically hear some mothers describe as a "best friendship." I marvel at that characterization as I truthfully do not honestly believe it is even appropriate. So what caused my

daughter to come to me in middle school and tell me she was being "picked on" (is the word I believe she used) through IM is still a puzzle: a puzzle and a miracle. I can remember hugging and crying and thinking thoughts that were neither professional nor legal about her abusers. This was not something we did not learn in graduate school or at an In-Service or Professional Development program. That information, I thought, through my tears, was about other people's children. I was fit to be tied, which, by the way, is not the best or most productive response. I now understand why Burnham, Wright, and Houser's research indicated that "cyberbullying is one area in which many youth choose not to talk to their parents" (p. 5). In fact, the cyber bullied student is often characterized by his or her purposeful lack of communication. "Children and youth rarely mentioned obtaining support from adults, such as parents, teachers, and law enforcement personnel. In fact in one specific study, one-fourth of the students would not tell anyone about the cyberbullying incidents they experienced" (Burnham, Wright, & Houser, 2011, p. 6). So I am very literal when I reference my daughter informing me about her experiences as a miracle because we have both learned that her ultimate reporting to me was not and is not the typical adolescent response. The timeliness of her suffering evidently was rather typical because "seventh and eighth grade students were more prone to be engaged in cyberbullying than sixth grade students" (Burnham, Wright, & Houser, 2011, p. 6). Her trauma engulfed her seventh and eighth grade years, which we all know are difficult enough without vile harassment. There is research to support much of the timing and issues she faced, worst of all her loneliness as, unfortunately, "typical." And we want our readers to know that the silent loneliness is a characteristic that must change. The path to change is through the comfort of open lines of communication for all, comfort in and knowledge of appropriate reporting procedures for students and responsibilities by the rest of the stakeholders.

The Insights of a Titleholder

As a point of insight and clarification, I was devastated by my cyberbullying experiences and was fortunate enough to be open to help from a guidance counselor friend of my mother's whom I liked and respected. Based on our previous relationship (I was the flower girl in her wedding!) I was open to her influence, which was fortunate given my middle school status. She encouraged me to focus on what I loved (this for me was my music, specifically my piano) and that led me to dabble in pageantry where I found new friends, pretty dresses, and new experiences. I did not find success, but that (she taught me) was not my goal. My goal was to focus on myself and find new experiences in my life that took me away from the bullies.

Almost a decade would pass. I would continue along my pageant path. I still found little "success" if success is defined by a State crown; but I still enjoyed my music, my new friends and that pageant wardrobe. Additionally, I came to enjoy the public speaking and interview acumen that was integral to the Miss America System in which I participated, even as a teen. I did win scholarship money along the way, and that did have a great allure for me. A state title continued to elude me--until this past year where, almost a decade after I began to dabble in such pursuit, I was crowned Miss Ohio 2012 in the state where I went to college. Twenty thousand dollars in scholarship money later (that year alone), and I proudly found myself wearing the Miss Ohio crown and banner, participating in the Miss America pageant, and traveling across the Buckeye State to talk about my experience with cyberbullying to over 5,000 people, most of them students. Whenever I have the opportunity, I ask my audience (typically middle schoolers) how many of them have been victim to cyberbullying? Consistently, more than half of the hands in the room or auditorium go up. Although I am pleased to promote my platform and spread my message about dealing with cyberbullies, I believe more kids than we think are victims of this hideous experience.

Role of Stakeholders

If you are an adult in the life of a cyber bullied student--a parent, a teacher, a member of law enforcement, a guidance counselor, a principal, an aunt or an uncle--if your life touches his or her life, you are in the loop of vital people labeled, "stakeholders." Such stakeholders must understand what students need from adults when cyberbullying occurs. All stakeholders "play an important role in helping young people understand the consequences of poor decisions in a digital age where favorable, as well as unfavorable text and images spread exponentially" (Siegle, 2010, p. 15). Students in these situations really do want help and support. Studies indicate they seek supportive adults who "are contemplative and willing to work with them" (Burnham, Wright, & Houser, 2011, p. 22) rather than overreact or take excessive measures. Stakeholders, then, need to "work judiciously, fairly and logically after an infraction so that adolescents will return to them when future problems transpire" (Burnham, Wright, & Houser, 2011, p. 22). This should come as no surprise: that if we work with our students patiently and respectfully, we are more likely to get their cooperation and enhance their learning curve than if we do not. Studies indicate that students will accept boundaries and monitoring of their computer use and websites visited if they are approached in a problem solving demeanor rather than a punitive one. A little respect goes a long way; good educators have walked along this two way street many times. We should expect and remember their developmental progress: it's still on going. So even when adolescents "know correct measures…they still respond impulsively and incorrectly at times, and cyberbullying concerns are no exception to this rule" (Burnham, Wright, & Houser, 2011, p. 23). Nevertheless, students really want adults to help find the perpetrators of cyberbullying, to learn and know about cyberbullying and be aware of when and where it happens; and they want to communicate with adults about it: both in groups (classroom discussions) and individually (one-on-one discussions).

Possible Solutions

Siegle (2010, p. 16) was quite straightforward in his recommendations that he adapted from the Cyberbullying Research Center. We will present an abbreviated presentation here of tips to parents and educators for preventing cyberbullying:

1. "All rules for interacting with people in real life also apply for interacting online or through cell phones. Cyberbullying inflicts harm. All forms of bullying are unacceptable."
2. "Make sure the school has Internet Safety educational programming in place." We have found that there are several reputable and some research-based programs that educate students about Internet safety. We highly recommend that both on the school level and at the classroom level, starting in elementary school, students are educated about being safe online.
3. "Model appropriate technology usage." We hope this is an unnecessary recommendation. But both parents and teachers are huge role models for their children and students, so it is vital that we all practice what we preach.
4. "Use filtering and blocking software if necessary. Depending on the situation, this can be Part of "a comprehensive approach to online safety," but understand software programs alone will not keep kids safe or prevent them from bullying others or accessing inappropriate content.
5. "Look for warning signs that something abnormal is occurring with respect to their technology usage. If children become withdrawn or their Internet use become obsessive, they could either be a victim or a perpetrator of cyberbullying."
6. "If necessary 'utilize an Internet Use Contract' and a 'Cell Phone Use Contract' to foster a crystal clear understanding about what it appropriate and what is not with respect to the

use of communication technology. To remind young people of this pledged commitment, these contracts should be posted in a highly visible place."

7. "Cultivate and maintain an open, candid line of communication with children, so that they are ready and willing to come to you whenever they experience something unpleasant or distressing in cyberspace."
8. "Cultivate a positive school climate as research has shown a link between a perceived "negative" environment on campus and an increased prevalence of cyberbullying."
9. "Educate yourself and your community." Schools can utilize specially created cyberbullying curricula, or general information sessions such as assemblies and in-class discussions to raise awareness among youth. Invite specialists to talk to staff and students. Send information to parents. Sponsor a community education event."
10. Provide a role model. When students see that someone else "beat the bullies,' then they really believe they can, too.

Hinduja and Patchin (2010, p. 2) remind us that "It will take a concerted and comprehensive effort from all stakeholders to really make a difference in reducing cyberbullying" Our experiences have proven this to be true. So it is our hope that the truth, pain, hope, honesty, and strategies presented here will help to motivate our audience. Cyberbullying is a very real issue among our youth, and it will take us all working together to beat the bullies.

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About the Authors

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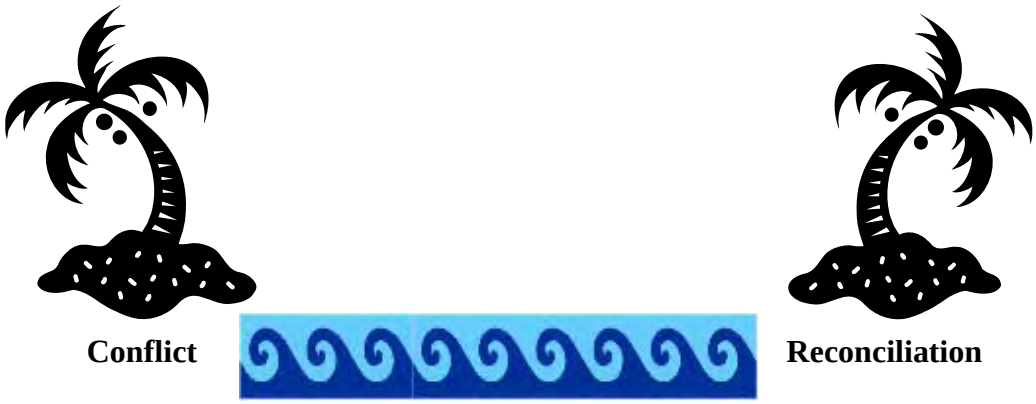
The Pillars of Conflict Resolution

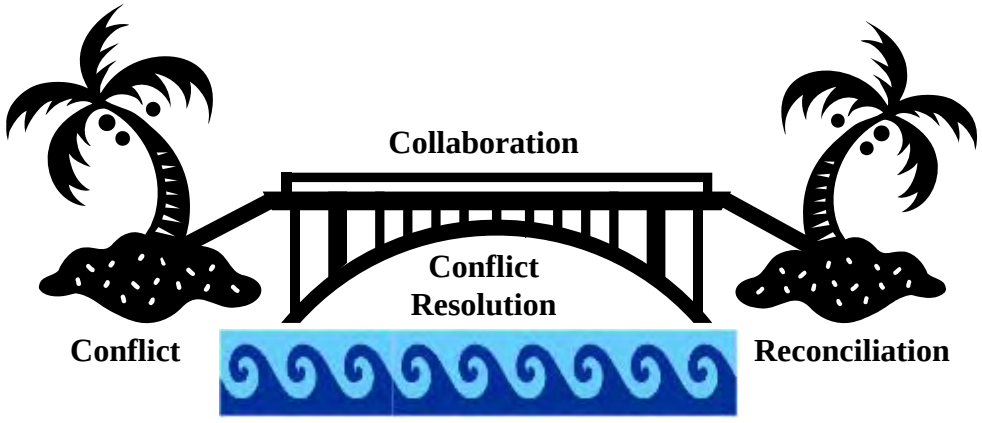
Jim Rowell
Rising Sun Consultants, LLC



Picture two islands with nothing but waves in-between them. One island can be called "Conflict" - described as disconnected from others, disharmonious, and dominated by feelings of being misunderstood, hurt, sadness, frustration and anger. The second island is called "Reconciliation" - described as having resolved relationships with others, harmonious, and possessing feelings of contentment, joy, and peace.

The problem lies with what is in between the two islands - the "Waves." The Waves can be described as lacking in communication, an unwillingness to listen, misunderstandings, and broken relationships.

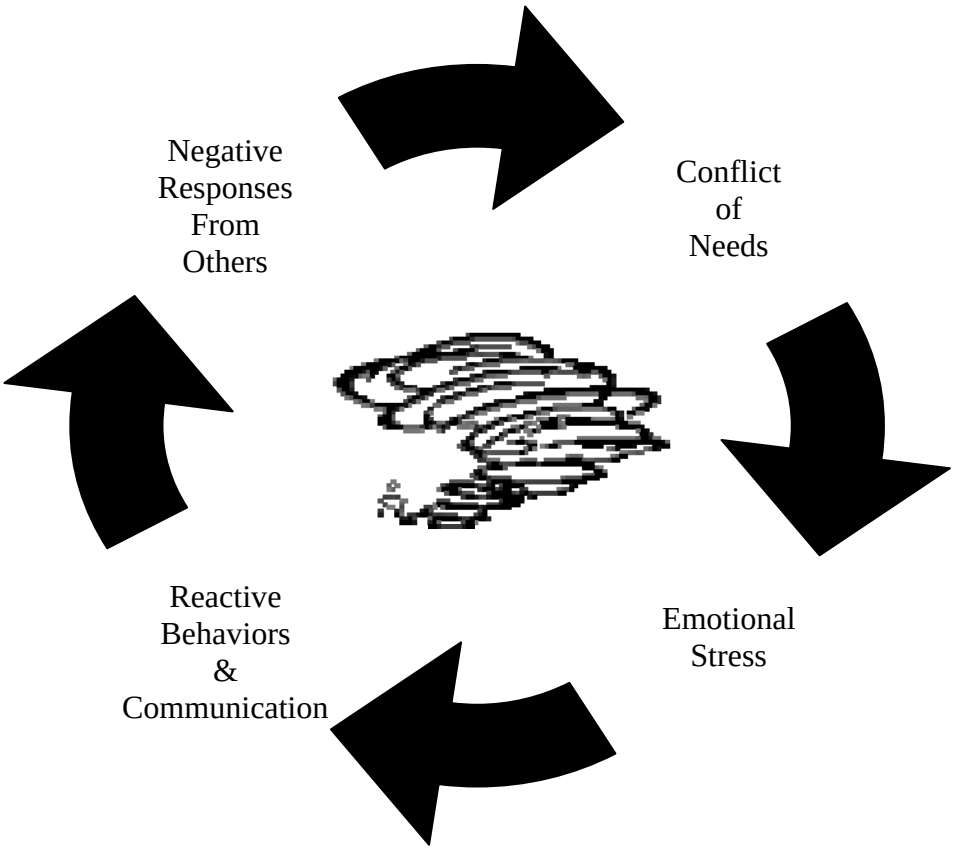
So, what is the solution? It is a bridge called "Collaboration" – building a win-win solution. As with most bridges, Collaboration needs to be held up so that it doesn't collapse. As such, the bridge of Collaboration is held up by the "Pillars of Conflict Resolution" - Defining the Conflict, Dealing with Feelings, Exploring Options, Selecting a Solution(s), and Developing a Contingency Plan.



Conflict occurs everywhere, in business, education, communities and families. Basically anywhere there are people, conflict exists. Conflict is not the problem; it is how we manage conflict that creates the greatest challenges and struggles. This article is written to bring a sense of normalcy to conflict and encourage people to embrace it and work through it. Conflict that is worked through and resolved well can result in improved communication and relationships.

The Conflict Cycle

Although described in various forms, most experts agree that in order to effectively address/resolve conflicts, it is important to first understand the various aspects of what is commonly referred to as the "Conflict Cycle":



Conflict of Needs

A stressful incident occurs, needs are not being met, which triggers a cycle of irrational beliefs.

Emotional Stress

Conflict of needs often results in negative feelings or sense of loss of control.

Reactive Behavior / Communications

Negative feelings about the conflict and/or the other person, not our rational beliefs, lead to inappropriate behavior and/or communications.

Negative Response from Others

Others pick up on these negative feelings/behaviors and frequently experience and exhibit similar feelings and behaviors.

Develop a Contingency Plan

Have a plan in place for what you will do if the agreed-upon solution(s) does not work or another conflict arises.

A Focus on Collaboration

Collaboration can best be thought of as a process of participation by which people work together to address mutual needs. With this definition in mind, a collaborative approach is not necessarily the same thing as a collaborative outcome. In the first case, it is the process, not the outcome, which matters.

When thinking about conflict, the key to collaboration is to explore needs/emotions first, before settling on solutions. A collaborative approach starts by looking for solutions that meet all needs/emotions and then moving backwards, only as far as possible, towards a compromise which meets as many mutual needs/emotions as possible.

The Pillars of Conflict Resolution

In resolving conflict use the following "Pillars" as your foundation:

Define the Conflict

Without interruption, each party should have the opportunity to share their issues and concerns.

Deal with Feelings

Individuals need to have an opportunity to express their feelings. Recognizing the feelings may help in resolving the conflict.

Explore Options

After both individuals have shared, options should be discussed for how to resolve the conflict.

Select a Solution(s)

Select a solution(s) that both individuals feel good about and that meets both individuals' interests or needs.

Develop a Contingency Plan

Have a plan in place for what you will do if the agreed-upon solution(s) does not work or another conflict arises.

Conclusion

It is important to remember that conflict is normal and can be a healthy part of our daily lives. Therefore, conflict in every walk of life just seems to be a fact of life. Misunderstandings arising from miscommunication exist as one of the most common problems. Such conflicts typically occur when one person's needs/desires interfere with another person's needs/ desires. These common problems seem to be exacerbated by such everyday variables as differing communication styles, age/generational differences, gender, cultural differences, racial differences, etc. In many cases, however, effective conflict resolution skills can make the difference between positive and negative outcomes.

So, as a reminder - conflict occurs everywhere, in business, education, communities and families. Basically, anywhere there are people, conflict exists. It is how we manage conflict that determines whether it will lead to damaged or improved relationships.

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About the Author

After more than 25 years in the corporate world as a professional trainer, supervisor and director, Jim Rowell turned his knowledge to the world of fitness… leadership fitness. As the CEO and co-founder of Rising Sun Consultants, LLC, Jim assists clients in building the health and well being of their organizational cultures. Jim's email address is jim@risingsunconsultants.com.

An Invitation to Write for Pennsylvania Educational Leadership

Denise G. Meister and Judith L. Zaenglein - Co-Editors
Pennsylvania Educational Leadership

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As editors of *Pennsylvania Educational Leadership* we try to publish a variety of types of articles: reports of successful practices, stories of teacher inquiries in the classroom, analyses of research and scholarly literature on current issues, critical analyses of educational policies and practices, thoughtful visions for improving education and schooling, and reports of more traditional research projects.

See the next page of this issue of *Pennsylvania Educational Leadership* for details regarding submission of manuscripts.

Manuscript Submission Guidelines

Content

Pennsylvania Educational Leadership provides for the sharing of formal and informal research related to the improvement of curriculum and supervision. Some issues may be thematic as determined by the editors in response to topics of timely interest. Submitted manuscripts should be responsive to this purpose and reflect research or analyses that inform practices in these areas.

Format

All submissions must be prepared using word processing software and saved in *Microsoft Word* (DOC) or rich text format (RTF). Manuscripts must comply with the guidelines in the *Publication Manual* of the American Psychological Association, sixth edition, 2009. Double-space all text, including quotations and references, use 1-inch margins for top and bottom, and use 1.25-inch right and left margins. All text should be Times New Roman 11-point font. Complete references should be placed at the end of the manuscript, using the "hanging indent" function. Additional article publication formatting details are listed on the *PASCD* web site (http://www.pascd.org).

Submission

Submissions should be sent via e-mail to pascdpel@wilkes.edu. Submissions must include three separate files saved in *Microsoft Word* (DOC) or rich text format (RTF) as follows:

1. Cover Page – Include the information listed below in a separate file
    - Manuscript Title
    - Thematic Topic (if appropriate)
    - Submission Date
    - Author's Name
    - Author's Institutional Affiliation
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    - Author's Complete Mailing Address
    - Biographical Information (not to exceed 30 words per author)

2. Abstract – In a separate file describe the major elements of the manuscript in 100-150 words. Do not include your name or any other identifying information in the abstract.

3. Manuscript – In a separate file include the manuscript, references, and supporting charts, table, figures, and illustrations as defined above.

Review

Manuscripts are peer reviewed as they are received. Manuscripts must be received by the second Friday in September for consideration for the fall issue and by the first Friday in February for the spring issue. It is the policy of *PEL* not to return manuscripts. Authors will be notified of the receipt of the manuscript. After an initial review by the editors, those manuscripts that meet the specifications will be sent to peer reviewers. Authors will be notified if the manuscript is judged to be not appropriate for review. Following peer review and editor review, the author(s) will be notified as to the status of the manuscript. The journal editors reserve the right to make editorial changes in the manuscript.