CONCORDIA UNIVERSITY CHICAGO

COLLEGE *of* GRADUATE STUDIES

1864

Research Supporting the Evidence-Based Model

Michelle Turner Mangan, Ph.D.

December 1, 2016

Effect Sizes of Key Elements

‣ Effect size is the amount of standard deviation in the higher performance that the strategy produces for students compared to students who were not exposed to the strategy.

  ‣ An effect size of 1.0 would indicate that the average student's performance would move from the 50th to the 83rd percentile.

  ‣ The research field generally recognizes effect sizes greater than 0.25 as significant and greater than 0.50 as substantial.

*based on research synthesis by Dr. Allan Odden & Dr. Larry Picus

Effect Size Chart

Recommended Strategy	Effect Size
Full Day Kindergarten	0.77
Class Size of 15 in Grades K-3	
Overall	0.25
Low Income and Minority Students	0.50
Multi-age Classrooms	
Multi-grade Classrooms	-0.1 to 0.0
Multi-age Classrooms	0.0 to 0.50
Professional Development with Classroom Instructional Coaches	1.25 o 2.70
Tutoring with Tier 2 Intervention Teachers, 1-1 and small group	0.4 to 2.5
English Language Learners Direct Intervention Support	0.45
Structured Academic Focused Summer School	0.45
Embedded Technology	0.30 to 0.38
Gifted and Talented	
Accelerated Instruction or Grade Skipping	0.5 to 1.0
Enrichment Programs	0.4 to 0.7

*based on research synthesis by Dr. Allan Odden & Dr. Larry Picus

School and District Size

▸ School units of roughly 400-600 elementary students and between 500 and 1,000 secondary students are the most effective and most efficient (Lee & Smith, 1997; Raywid, 1997/1998; Ready & Lee, 2004).

▸ Andrews, Duncombe, and Yinger (2002) and Duncombe and Yinger (2007, 2010) found that the optimum size for elementary schools was in the 300-500 student range, and for high schools was in the 600-900 range.

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

1. Full Day Kindergarten

▸ Fusaro's (1997) late 1990s meta-analysis of 23 studies comparing the achievement effect of full-day kindergarten to half-day kindergarten programs, found an average **effect size of +0.77**, which is substantial.

▸ Children participating in full-day kindergarten programs do better in learning the basic skills of reading, writing and mathematics in the primary grades than children who receive only a half-day program or no kindergarten at all (Lee, Burkam, Ready, Honigman & Meisels, 2006).

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

1. Full Day Kindergarten (continued)

▶ Denton, West & Walston (2003) showed that children who attended full-day kindergarten had a greater ability to demonstrate reading knowledge and skills than their peers in half-day programs, across the range of family backgrounds.

▶ Cooper et al.'s (2010) comprehensive meta-analysis reached similar conclusions, finding the average **effect size of students in full-day versus half-day kindergarten to be +0.25.**

▶ A *randomized controlled trial*, the "gold standard" of education research, found the **effect of full-day versus half-day kindergarten to be about +0.75 standard deviations** (Elicker & Mathur, 1997).

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

2. Class Sizes for K-3

‣ The primary evidence on the impact of small classes today is the Tennessee STAR study, which was a large scale, *randomized controlled experiment* of class sizes of approximately 15 compared to a control group of classes with approximately 24 students in kindergarten through grade 3 (Finn & Achilles, 1999; Word et al., 1990).

  ‣ The study found that students in the small classes achieved at a significantly higher level (**effect size of about 0.25 standard deviations**) than those in regular class sizes, and that the impacts were even larger (**effect size of about 0.50**) for low-income and minority students (Finn, 2002; Grissmer, 1999; Krueger, 2002).

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

3. Class Size for Grades 4-12

▸ The national average class size in middle and high schools is roughly 25, and nearly all comprehensive school reform models were developed on the basis of a class size of 25 (Odden, 1997a; Stringfield, Ross & Smith, 1996), a conclusion on class size reached by the dozens of experts who created these whole-school design models.

▸ Whitehurst and Chingos (2010) argue that there might be a modest linear relationship in improving student performance when class size drops from between 25 and 30 students to 15.

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

4. Specialist Teachers

▸ One of the most important elements of effective collaborative work is team-focused data-based decision-making, using student data to improve instructional practices, now shown to be effective by a recent *randomized controlled trial* (Carlson, Borman & Robinson, 2011; Anrig, 2015).

▸ Cognitive research findings suggest that use of longer class periods, such as a block schedule, may be a better way to organize the instructional time of a high school. (Bransford, Brown &Cocking, 1999; Donovan & Bransford, 2005a, 2005b, 2005c).

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

5. Instructional Facilitators/Coaches

▸ Coaches, or instructional facilitators, coordinate the instructional program but most importantly provide the critical ongoing instructional coaching and mentoring that the professional development literature shows is necessary for teachers to change and improve their instructional practice (Cornett & Knight, 2008; Crow, 2011; Garet, Porter, Desimone, Birman, & Yoon, 2001; Joyce & Calhoun, 1996; Joyce & Showers, 2002).

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

5. Instructional Facilitators (continued)

▸ Early research found **strong effect sizes (1.25-2.71)** for coaches as part of professional development (Joyce & Calhoun, 1996; Joyce & Showers, 2002).

▸ A 2010 evaluation of a Florida program that provided reading coaches for middle schools found positive impacts on student performance in reading (Lockwood, McCombs & Marsh, 2010).

▸ A related study found that coaches provided as part of a data-based decision-making initiative also improved both teachers' instructional practice and student achievement (Marsh, McCombs & Martorell, 2010).

▸ A recent *randomized controlled trial* of coaching (Pianta, Allen & King, 2011) found significant positive impacts in the form of student achievement gains across four subject areas – mathematics, science, history, and language arts.

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

6. & 22. Tutors
(Core; Tier 2 & 3 Intervention Teachers)

‣ The most powerful and effective approach for helping students struggling to meet state standards is individual one-to-one or small group (1-3 or 1-5 maximum) tutoring provided by licensed teachers (Shanahan, 1998; Wasik & Slavin, 1993).

  ‣ Tutoring program effect sizes vary by the components of the approach used, e.g. the nature and structure of the tutoring program, but **effect sizes on student learning reported in meta-analyses range from 0.4 to 2.5** (Cohen, Kulik & Kulik, 1982; Shanahan, 1998; Shanahan & Barr, 1995; Wasik & Slavin, 1993) with an **average of about 0.75** (Wasik & Slavin, 1993).

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

6. & 22. Tutors (continued)

‣ Researchers (Cohen, Kulik, & Kulik, 1982; Farkas, 1998; Shanahan, 1998; Wasik & Slavin, 1993) and experts on tutoring practices (Gordon, 2009) have found greater effects when the tutoring includes the following:

- Professional teachers as tutors
- Tutoring initially provided to students on a one-to-one basis
- Tutors trained in specific tutoring strategies
- Tutoring tightly aligned to the regular curriculum and to the specific learning challenges, with appropriate content-specific scaffolding and modeling
- Sufficient time for tutoring, and
- Highly structured programming, both substantively and organizationally.

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

6. & 22. Tutors (continued)

▸ Torgeson (2004) states that meta-analyses consistently show the positive effects of reducing reading group size (Elbaum, Vaughn, Hughes & Moody, 1999) and identifies experiments with both one-to-three and one-to-five teacher-student groupings.

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

6. & 22. Tutors (continued)

▸ At the elementary level, using a randomized controlled trial, May et al. (2013) assessed the impact of tutors in a Reading Recovery program. In the third year of a five-year evaluation, they found that Reading Recovery tutoring had an **effect size of 0.68** on overall reading scores relative to the population of students eligible for such services in the specific study, and a **0.47 effect size** relative to the national population of first grade struggling readers. The effects were similarly large for reading words and reading comprehensive sub-scales.

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

6. & 22. Tutors (continued)

▸ For students in high schools, Cook et al. (2014) reported on a *randomized controlled trial* of a two-pronged intervention that provided disadvantaged youth with tutoring *and* counseling. They found that intensive individualized academic extra help – tutoring – combined with non-academic support seeking to teach grade 9 and 10 youth social-cognitive skills based on the principles of cognitive behavioral therapy (CBT), led to improved math and reading performance. The study sample consisted mainly of students from low income and minority backgrounds, which generally pose the toughest challenges. The **effect size for math was 0.65 and for reading was 0.48**; the combined program also appeared to **increase high school graduation by 14 percentage points (a 40 percent hike).**

9. Supervisory Aides

‣ Research does not support the use of instructional aides for improving student performance (Gerber, Finn, Achilles & Boyd-Zaharias, 2001).

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

10. Librarians

‣ Regardless of family income, children with access to endorsed librarians working full time perform better on state reading assessments (Rodney, Lance, & Hamilton-Rennell, 2003; Lance & Hofschire, 2012).

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

11. Principals and APs

- Murphy (2016) provides an overview of the key roles principals play in organizing schools to boost student learning.
- Herman, Gates, Chavez-Herrerias, & Harris (2016) conducted a review of the evidence on school leadership interventions and found that
  - School leadership can be a powerful driver of improved education outcomes.
  - Activities designed to improve leadership demonstrate positive impact on student and teacher outcomes.
- Leithwood, Seashore Louis, Anderson, & Wahlstrom (2004) concluded that there is no evidence of low-performing schools turning around without effective leadership.

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

11. Principals and APs

- School leadership is second only to teaching among school-related influences on student success (Marzano, Waters, & McNulty, 2003; Supovitz & Poglinco, 2001).

- According to Manna (2015), principals:
  - Have the greatest impact on schools with the greatest needs
  - Strongly shape the conditions for high-quality teaching and learning
  - Are the prime factor in determining whether teachers stay in high-needs schools

- Effective schools are led by principals who are effective leaders (Goldring, Porter, Murphy, Elliott, & Cravens, 2009).

*Excerpts from Leahy (2016)

13. Gifted & Talented

▸ High-ability, culturally-diverse learners who participated in three or more years of specialized elementary and/or middle school programming, had higher achievement at high school graduation, as well as other measures of school achievement, than a comparable group of high-ability students who did not participate (Struck, 2003).

▸ Enriched classes for gifted and talented students produce **effect sizes of about +0.40** and accelerated classes for gifted and talented students produce somewhat larger **effect sizes of +0.90** (Gallagher, 1996; Kulik & Kulik, 1984; Kulik & Kulik, 1992).

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

13. Gifted & Talented (continued)

‣ Access to Curriculum

  ‣ Curriculum programs specifically designed for talented learners produce greater learning than regular academic programs. (see Vermont EB study for numerous citations).

‣ Access to Acceleration

  ‣ There are at least 17 different types of acceleration ranging from curriculum compacting (which reduces the amount of time students spend on material) to subject matter acceleration (going to a higher grade level for one class) to high school course options like Advanced Placement or concurrent credit (Southern, Jones & Stanley, 1993).

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

13. Gifted & Talented (continued)

▸ Access to Trained Teachers

  ▸ Research and teacher reports indicate that general classroom teachers make very few, if any, modifications for academically talented learners (Archambault, et al, 1993), even though talented students have mastered 40 to 50 percent of the elementary curriculum before the school year begins.

  ▸ Students report differences among teachers who have had such training, and independent observers in the classroom document the benefit of this training as well (Hansen & Feldhusen, 1994).

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

14. Professional Development

▸ Effective teachers are the most influential factor in student learning (Rowan, Correnti & Miller, 2002; Wright, Horn & Sanders, 1997).

▸ Systemic deployment of effective instruction is key to improving student learning and reducing achievement gaps (Odden, 2011a; Raudenbusch, 2009).

▸ PD is most effective when it includes opportunities for teachers to work directly on incorporating the new techniques into their instructional practice with the help of instructional coaches (Joyce & Showers, 2002).

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

15. Instructional Materials

▸ To ensure that materials are current, twenty states have instituted adoption cycles in which they specify or recommend texts that are aligned to state learning standards (Ravitch, 2004).

▸ Up-to-date instructional materials are expensive, but vital to the learning process. Researchers estimate that up to 90 percent of classroom activities are driven by textbooks and textbook content (Ravitch, 2004).

▸ Adoption cycles with state funding attached allow districts to upgrade their texts on an ongoing basis instead of allowing these expenditures to be postponed indefinitely.

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

16. Assessment

▸ Black and William (1998) studied how ongoing data on student performance could be used by teachers to frame and reform instructional practice.

▸ Current best practices highlight how professional learning communities use student data to improve teaching and learning (DuFour et al., 2010; Steiny, 2009).

▸ The goal is to have teachers use data to inform their instructional practice, identify students who need interventions and improve student performance (Boudett, City & Murnane, 2007).

▸ Data-based decision-making has become a central element of schools that are moving the student achievement needle (Odden, 2009, 2012).

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

16. Assessment (continued)

▸ Marsh, McCombs and Martorell (2010) showed how data-driven decision-making in combination with instructional coaches produced improvements in teaching practice as well as student achievement.

▸ A recent study of such efforts using the gold standard of research – a *randomized controlled trial* – showed that engaging in data-based decision-making using interim assessment data improved student achievement in both mathematics and reading (Carlson, Borman & Robinson, 2011).

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

17. Technology

- Research also shows that these technology systems work very well for many students, and can work very effectively in schools with high concentrations of lower income and minority students (Whitmire, 2014).

- Technology programs (blended learning or the flipped classroom) can be less costly than traditional public schools (Battaglino, Haldeman & Laurans, 2012; Odden, 2012).

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

17. Technology (continued)

- ## One-to-one Computing

  - Successful one-to-one programs are driven by district/school leader advocates for these programs (Oliver, 2012). These programs demand a high level of coordination between the instructional and business sides of the school district. They require board and community support.

  - There is little evidence that moving to one-to-one computing is an effective strategy to dramatically boost student achievement (see for example, Goodwin, 2011; Lowther et al., 2007; Shapley et al., 2009; Silvernail & Gritter, 2007).

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

18. Extra Duty & Activities Stipends

- Research shows, particularly at the secondary level, that students engaged in student activities tend to perform better academically than students not so engaged (Feldman & Matjasko, 2005).

  - Participation in interscholastic (as compared to intramural) sports had a positive impact for both boys and girls on grades, post-secondary education aspirations, reducing drop- out rates, lowering alcohol and substance abuse, and led to more years of schooling.

  - The effect was particularly strong for boys participating in interscholastic football and basketball.

  - But the effects differed by race and gender, and were not as strong for African Americans.

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

18. Extra Activities (Continued)

‣ Too much extra-curricular activity can be a detriment to academic learning (Committee on Increasing High School Students' Engagement and Motivation to Learn, 2004; Steinberg, 1996, 1997).

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

23. Additional Pupil Support Teachers

▸ Parent outreach that explicitly and directly addresses what parents can do to help their children be successful in school, and to understand the standards of performance that the school expects, are the types of school-sponsored parent activities that produce discernible impacts on students' academic learning (Steinberg, 1997).

▸ Parent outreach is particularly important for parents of students in the middle or lower end of the achievement range, as often these students know very little of the requirements for transition from high school to post-secondary education (Kirst & Venezia, 2004).

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

24. Extended Day Programs

‣ In a review of research, Vandell, Pierce and Dadisman (2005) found that well designed and administered after-school programs yield numerous improvements in academic and behavioral outcomes (see also Fashola, 1998; Posner & Vandell, 1994).

‣ On the other hand, the evaluation of the 21st Century Community Learning Centers (CCLC) Program (James-Burdumy et al., 2005), though hotly debated, indicated that for elementary students, extended-day programs did not appear to produce measurable academic improvement.

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

24. Extended Day Programs (continued)

‣ Overall, studies have documented positive effects of extended-day programs on the academic performance of students in select after-school programs (e.g., Takoata & Vandell, 2013; Vandell, 2014).

  ‣ The evidence is mixed both because of research methods (few randomized trials), poor program quality and imperfect implementation of the programs studied.

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

25. Summer School

▸ Summer school programs should be part of the set of programs available to provide struggling students the additional time and help needed to achieve to standards and earn academic promotion from grade to grade (Borman, 2001).

▸ Providing additional time to help all students master the same content is an initiative that is grounded in research (National Education Commission on Time and Learning, 1994).

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

25. Summer School (continued)

▸ Research dating back to 1906 shows that students, *on average*, lose a little more than a month's worth of skill or knowledge over the summer break (Cooper, Nye, Charlton, Lindsay, & Greathouse, 1996).

▸ Summer breaks have a larger deleterious impact on poor children's reading and mathematics achievement. This loss can reach as much as one-third of the learning during a regular nine-month school year (Cooper et al., 1996).

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

25. Summer School (continued)

▸ A longitudinal study by Alexander and Entwisle (1996) showed that these income-based summer learning differences *accumulate* over the elementary school years, such that poor children's achievement scores – without summer school – fall further and further behind the scores of middle class students as they progress through school grade by grade.

▸ Evidence on the effectiveness of summer programs in attaining these goals is mixed. Though past research linking student achievement to summer programs shows promise, several studies suffer from methodological shortcomings and low quality of the summer school programs (Borman & Boulay, 2004).

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

25. Summer School (continued)

‣ A meta-analysis of 93 summer school programs (Cooper, Charlton, Valentine, & Muhlenbruck, 2000) found that the average student in summer programs outperformed about 56 percent to 60 percent of similar students not receiving the programs.

  ‣ However, the certainty of these conclusions is compromised, because only a small number of studies (e.g., Borman, Rachuba, Hewes, Boulay & Kaplan, 2001) used random assignment, and program quality varied substantially. More recent *randomized controlled trial* research of summer school reached more positive conclusions (Borman & Dowling, 2006; Borman, Goetz & Dowling, 2009).

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

25. Summer School (continued)

‣ Roberts (2000) found an **effect size of 0.42** in reading achievement for a *randomized sample* of 325 students who participated in the Voyager summer school program.

‣ Researchers (McCombs et al., 2011) note several program components related to improved achievement effects for summer program attendees, including:

  ‣ Early intervention during elementary school and a full 6-8 week summer program
  ‣ A clear focus on mathematics and reading achievement, or failed courses in high schools
  ‣ Small-group or individualized instruction
  ‣ Parent involvement and participation
  ‣ Careful scrutiny for treatment fidelity, and good instruction in reading and mathematics
  ‣ Monitoring student attendance.

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

25. Summer School (continued)

‣ Summer programs that include these elements hold promise for improving the achievement of at-risk students and closing the achievement gap. Indeed, the most recent review of the effects of summer school programs reached this same conclusion (Kim & Quinn, 2013).

   ‣ Their meta-analysis of 41 school- and home-based summer school programs found that K-8 students who attended summer school programs with teacher directed literacy lessons showed significant improvements in multiple areas including reading comprehension, with effects much larger for students from low-income backgrounds.

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

26. English Language Learners (ELLs)

- A best-evidence synthesis of 17 studies of bilingual education (Slavin & Cheung, 2005) found that ELL students in bilingual programs outperformed their non-bilingual program peers. Using studies focused primarily on reading achievement, the authors found an **effect size of +0.45** for ELL students.

- A more recent *randomized controlled trial* also produced strong positive effects for bilingual education programs (Slavin, et al., 2011), *but* concluded that the language of instruction is less important than *the approaches taken to teach reading*.

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

26. ELL Students (continued)

▸ Gerstein (2006) concluded that ELL students can be taught to read in English if, as shown for monolingual students, the instruction covers phonemic awareness, decoding, fluency, vocabulary, and reading comprehension.

▸ Research shows that ELL students need a solid and rigorous core curriculum as the basis from which to provide any extra services (Gandara & Rumberger, 2008; Gandara, Rumberger, Maxwell-Jolly, & Callahan, 2003).

▸ Effective teachers who are fluent in the ELL student's native language are even more effective with those students (Loeb, Soland & Fox, 2014).

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

26. ELL Students (continued)

▸ Hakuta (2011) notes that English language learning takes time and that "academic language" is critical to learning the new Common Core Standards.

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

27. Special Education

▸ Providing appropriate education services for students with disabilities, while containing costs and avoiding over-identification of students, particularly minority students, presents several challenges (Levenson, 2012).

▸ In their book on the best approaches to serve students with disabilities, Frattura and Capper (2007) conclude that both research and most leading educators recommend that educating students in general education environments results in higher academic achievement and more positive social outcomes for students with and without disability labels, as well as being the most cost effective way to educate students.

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

27. Special Education (continued)

▸ By preventing student underachievement and altering how students who struggle are educated,

  ▸ fewer students will be inappropriately labeled with a disability, more students will be educated in heterogeneous learning environments, and higher student achievement and a more equitable distribution of achievement will result (Frattura & Capper, 2007).

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

27. Special Education (continued)

▸ Research shows that many mild and moderate disabilities, particularly those associated with students learning to read, are correctable through intensive early intervention.

  ▸ Several studies (e.g., Borman & Hewes, 2003; Landry, 1999; Slavin, 1996) have documented that through a series of intensive instructional interventions (e.g.. preschool, small classes, rigorous reading curriculum, 1 to 1 tutoring), nearly 75 percent of struggling readers identified in kindergarten and grade 1 can be brought up to grade level without the need for placement in special education.

  ▸ Other studies have noted decreases in disability labeling of up to 50 percent with interventions of this type (see for example, Levenson, 2011; Madden, Slavin, Karweit, Dolan & Wasik, 1993; Slavin, 1996).

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

27. Special Education (continued)

‣ The U.S. Department of Education encouraged states and school districts to abandon the IQ-achievement discrepancy model and adopt Response to Intervention (RTI) models, also discussed above, based on recent research findings (Donovan & Cross, 2002; Lyon et al., 2001; President's Commission on Excellence in Special Education, 2002; Stuebing et al., 2002).

‣ An RTI model, what we call a proactive approach above, identifies students who are not achieving at the same level and rate as their peers and provides appropriate interventions, the first ones of which should be part of the "regular" school program and not funded with special education resources (Mellard, 2004).

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

27. Special Education (continued)

‣ The core features of RTI, which is a critical part of the EB approach, include:

▸ High quality classroom instruction

▸ Research-based instruction

▸ Classroom performance

▸ Universal screening

▸ Continuous progress monitoring

▸ Research-based interventions, that would include 1-1 tutoring

▸ Progress monitoring during interventions

▸ Fidelity measures (Mellard, 2004).

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

27. Special Education (continued)

▸ Although there are situations for which a student needs an individual aide, in many cases such aides can work to the inadvertent detriment of students (Giangreco et al., 2005).

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

Conclusions

‣ The intent of the EB model is to identify a base per pupil spending level, together with extra resources for students from poverty or non-English speaking backgrounds and/or with disabilities, that are adequate to provide all students with robust opportunities to meet college and career ready standards.

‣ The expectation is that funds provided through the school funding formula will be used to boost student achievement and close achievement gaps.

‣ The key is to link the level of funding with its effective use.

‣ The EB model is unique in that it is derived from research and best practices that identify programs and strategies that increase student learning.

‣ The formulas and ratios for school resources that have been developed from that research have been reviewed by dozens of educator panels in multiple states over the past decade, and adjusted both to meet specific state standards and also evolving best practices.

*Excerpts from Vermont EB Study (Odden & Picus, 2016)

Questions & Comments

Michelle Turner Mangan, Ph.D.

Associate Professor & Chair

Department of Research

College of Graduate Studies

Concordia University Chicago

Michelle.Mangan@CUChicago.edu