EB Model- Tutoring Recommendations

The following recommendations and rationale were presented by Picus, Odden, and Associates (POA) as part of the 2016 study. From that report:

Overview of Approach

The evidence-based (EB) approach to measuring adequacy begins with educational research on student learning and school organization to define the resource needs that would allow a prototypical school or district to meet state standards. The EB approach is unique in that it is derived from research and best practices that identify programs and strategies that increase student learning. Further, the formulas and ratios for school resources originally developed from the research have also been reviewed by dozens of educator panels in multiple states over the past decade and adjusted to meet both the specific state standards and evolving best practices. The EB approach relies on two major types of research:

1. Reviews of research on the student achievement effects of each of the model's individual major elements, with a focus more recently on randomized controlled trials — the gold standard of evidence on "what works."
2. Studies of schools and districts that have dramatically improved student performance over a four- to six-year period on state tests.

The EB approach then incorporates these effective practices and strategies into a core EB school improvement model describing the resources needed at the school and district central office levels to help students meet rigorous state standards. This core EB school improvement model is then reviewed by panels of state educators to ensure the recommendations are consistent with both the resources needed to meet the state's specific standards and requirements, as well as with the state's educational context.

Tutoring Recommendations from EB model

1 FTE per school, and an additional FTE for every 125 poverty students

Rationale

The most powerful and effective extra-help strategy to enable struggling students to meet rigorous performance standards is individual one-to-one tutoring provided by licensed teachers (Shanahan, 1998; Wasik & Slavin, 1993). Students who must work harder and need more assistance to achieve to proficiency levels especially benefit from preventative tutoring (Cohen, Kulik, & Kulik, 1982). 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). The most recent meta-analysis of the impact of intelligent (or computer-based) tutoring found that the average effect size was 0.66 across multiple subjects, which

increases student performance from the 50th to the 75th percentile (Kulik & Fletcher, 2016), though the effect varied by type of tutoring. Finally, the most recent meta-analysis of the impact of tutoring found similarly high effects (Dietrichson, Bog, Filges, & Jorgensen, 2017).

The impact of tutoring programs depends on how they are staffed and organized, their relation to the core program, and the tutoring intensity. 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 the tutoring
- Highly structured programming, both substantively and organizationally

Please note these three specific structural features of effective one-to-one tutoring programs:

1. Each tutor would tutor one student every 20 minutes, or three students per hour. This would allow one tutor position to tutor 18 students a day. (Since tutoring is such an intensive activity, individual teachers might spend only half of their time tutoring; but a one-FTE tutoring position would allow 18 students per day to receive 1:1 tutoring.) Four positions would allow 72 students to receive individual tutoring daily.

2. Most students do not require tutoring all year long; tutoring programs generally assess students quarterly and change tutoring arrangements. With modest changes, close to half the student body of a 400-student school could receive individual tutoring during the year.

3. Not all students who are from a low-income background require individual tutoring, so a portion of the allocation could be used for students in the school who might not be from a lower-income family, but nevertheless have a learning issue that could be remedied by tutoring. This also is part of the rationale for including one tutor in each prototypical school, regardless of the number of at-risk students.

Though this discussion focuses on *individual* tutoring, schools could also deploy these resources for small-group tutoring. In a detailed review of the evidence on how to structure a variety of early intervention supports to prevent reading failure, Torgeson (2004) shows how one-to-one tutoring, one-to-three tutoring, and one-to-five small-group sessions (all Tier 2 interventions) can be combined for different students to enhance their chances of learning to read successfully.

One-to-one tutoring would be reserved for the students with the most severe reading difficulties, scoring at or below the 20th or 25th percentile on a norm-referenced test, or at the below-basic level on

state assessments. Intensive instruction for groups of three to five students would then be provided for students above those levels but below the proficiency level.

It is important to note that the instruction for all student groups needing extra help needs to be more explicit and sequenced than that for other students (Honig, 1996). Young children with weakness in knowledge of letters, letter-sound relationships, and phonemic awareness need explicit and systematic instruction to help them first decode and then learn to read and comprehend. As Torgeson (2004:12) states,

> Explicit instruction is instruction that does not leave anything to chance and does not make assumptions about skills and knowledge that children will acquire on their own. For example, explicit instruction requires teachers to directly make connections between letters in print and the sounds of words, and it requires that these relationships be taught in a comprehensive fashion. Evidence for this is found in a recent study of preventive instruction given to a group of high at-risk children in kindergarten, first grade and second grade….. Only the most [phonemically] explicit intervention produced a reliable increase in the growth of word-reading ability…. Schools must be prepared to provide very explicit and systematic instruction in beginning word-reading skills to some of their students if they expect virtually all children to acquire work-reading skills at grade level by the third grade…. Further, explicit instruction also requires that the meanings of words be directly taught and be explicitly practiced so that they are accessible when children are reading text…. Finally, it requires not only direct practice to build fluency…but also, careful, sequential instruction and practice in the use of comprehension strategies to help construct meaning.

Torgeson (2004) goes on to state 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. Though one-to-one tutoring works with 20 minutes of tutoring per student, a one-to-three or one-to-five grouping requires a longer instructional time for the small group—up to 45 minutes. The two latter groupings, with 45 minutes of instruction, reduced the rate of reading failure to a miniscule percentage.

For example, if the recommended numbers of tutors are used for such small groups, one reading position could teach 30 students a day in the one-to-three setting, with 30 minutes of instruction per group; and 30-plus students a day in the one-to-five setting, with 45 minutes of instruction per group. Four tutoring positions could then provide this type of intensive instruction for up to 120 students daily. In short, though, one-to-one tutoring is best, and some students need one-to-one tutoring. Other small-group practices (which characterize the bulk of Tier 2 interventions) can also work, with the length of instruction for the small group increasing as the size of the group increases.

Though Torgeson (2004) states that similar interventions can work with middle and high school students, the effect often is smaller, as by the time students enter middle and high schools with severe reading deficiencies, it becomes much more difficult to undo the lasting damage of not having learned to read. However, a new randomized control study (Cook et al., 2014), discussed next, found similarly

positive impacts of a tutoring program for adolescents in high-poverty schools if it was combined with counseling as well. This is made possible in the EB Model, as it includes such additional nonacademic pupil support resources (see Element 27 discussion). Nevertheless, Torgeson is also viewed as a key individual in encouraging practitioners and policymakers to address reading interventions for secondary students, because until the 1980s most reading research and interventions were developed for grades K–3. Since then, several effective secondary reading interventions have been developed (Scammacca, Roberts, Vaughn, & Stuebing, 2015) and should be considered by schools, as the resources to deploy them are included in the EB funding model.

The rationale outlined above is strengthened by two recent randomized controlled trials of the effectiveness of tutoring for struggling students, which support the EB's logic of providing a minimum level of tutor support in all schools, as well as additional tutors for schools with greater need. At the elementary level, May et al. (2016), using a randomized controlled trial, assessed the impact of tutors in a Reading Recovery program. Reading Recovery is a short-term intervention that provides one-on-one tutoring to first-grade students who are struggling in reading. The supplementary program aims to promote literacy skills and foster the development of reading strategies by tailoring individualized lessons to each student. As part of the scale-up, the 3,747 teachers trained in Reading Recovery with Federal Investing in Innovation (i3) grant funds provided one-to-one Reading Recovery lessons to 62,000 students and taught an additional 325,000 students in other instructional settings.

The evaluation included a four-year, multi-site randomized control trial (RCT) involving nearly 7,000 first-grade students in more than 1,200 schools. Students who participated in Reading Recovery significantly outperformed students in the control group on measures of overall reading, reading comprehension, and decoding. These effects were similarly large for English language learners and students attending rural schools, which were the student subgroups of priority interest for the i3 scale-up grant program.

The RCT revealed medium-to-large impacts across all outcome measures. Effect sizes on the Iowa Test of Basic Skills (ITBS) Reading Total assessment and its Comprehension and Reading Words subscales at the end of 12 to 20 weeks of treatment ranged from 0.30 to 0.48 standard deviations. For the ITBS Total Reading battery, this effect size translates to a gain of 18 percentage points in the treatment group, as compared with control students. The growth rate observed in students who participated in Reading Recovery over approximately a five-month period was 131 percent of the national average rate of progress for first-grade students.

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 nonacademic supports seeking to teach grade nine and ten youth social-cognitive skills based on the principles of cognitive behavioral therapy, led to improved math and reading performance. The study sample consisted mainly of students from low-income and minority backgrounds, who 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). The authors concluded that this

intervention seemed to yield larger gains in adolescent outcomes per dollar spent than many other intervention strategies.

These studies are highlighted for several reasons. First, they represent new, randomized controlled trials that support the efficacy of tutoring. Second, they show tutoring can work not only for elementary but also for high school students, whereas most of the tutoring research addresses elementary-aged students. Third, they show tutoring can work even in the most challenging educational environments. Last, they bolster the EB Model recommendation stated below: that extra-help resources in schools triggered by poverty and ELL status should also include some nonacademic counseling resources as well, since the treatment in the second study combined tutoring with counseling.

References

(Those with an asterisk * refer to randomized controlled trials.)

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