Analysis of District MAP data

Reading

In general the district very closely mirrors the Wisconsin MAP alignment / normative data in the area of reading. For example, in the 2011 – 2012 school year, sixth-grade Elmbrook students averaged a score of 218 in reading. This is the exact cut-score for proficient set by NWEA (it aligns with proficiency on the WKCE). This same trend exists at every grade level. District averages almost exactly mirror NWEA cut scores for grade-level proficiency in reading. To see this, compare the mean column (indicating district mean scores) to the NWEA proficiency column in Table 1.

Table 1. Wisconsin and Elmbrook MAP Performance: Reading – Fall 2011

Grade	NWEA Prof.	-2SD	-1SD	Mean (SD)	+1SD	+2SD
2	183	157	171	185 (14)	199	213
3	197	170	183	196 (13)	209	222
4	206	180	193	206 (13)	219	232
5	212	189	201	213 (12)	225	237
6	218	194	206	218 (12)	230	242
7	222	199	211	223 (12)	235	247
8	227	202	214	226 (12)	238	250
%		2SD+	1-2 SD	Mean +/-	1-2 SD	2.2%
students		2.2%	13.5%	1SD 68%	13.5%	

Note. Nearly all individual student scores carry a standard error of ~+/3pts

Math

In math scores for Elmbrook students are above the proficient mark (on average). For example, Elmbrook fifth-grade students average a score of 223 in math in 2011 – 2012. This compares to a cut-score of 229 for advanced (212 proficient) in fifth-grade math as set by NWEA. This shows that the average performance is above grade-level proficiency in math. On average, district math students score at the proficient range for students one year higher. Continuing with the fifth grade example from above (RIT of 223), these students scored one point higher than the proficient cut score for sixth-grade students (222). This is consistent in math for every elementary and middle-grade level. Primary grade math scores are not quite as advanced but are still above grade-level proficiency. To see this,

compare the mean column (indicating district mean scores) to the NWEA proficiency column in Table 2.

Table 2. Wisconsin and Elmbrook MAP Performance: Math – Fall 2011

Grade	NWEA Prof.	-2SD	-1SD	Mean (SD)	+1SD	+2SD
2	180	167	178	189 (11)	200	211
3	194	176	188	200 (12)	212	224
4	204	188	201	214 (13)	227	240
5	212	197	210	223 (13)	236	249
6	222	201	216	231 (15)	246	261
7	227	206	220	234 (14)	248	262
8	235	213	227	241 (14)	255	269
%		2SD+	1-2 SD	Mean +/-	1-2 SD	2.2%
students		2.2%	13.5%	1SD 68%	13.5%	

Note. Nearly all individual student scores carry a standard error of ~+/3pts

Grade-Level Diversity

What is perhaps more interesting than average scores are grade-level standard deviations. These numbers indicate the degree of content-mastery heterogeneity at a given grade level and are presented in parentheses in the "mean" columns of Tables 1 and 2. Looked at for individual buildings they can also indicate relative diversity of readiness in a given classroom. Using the standard deviations reported in district MAP data reports, one can get an idea of diversity of student readiness at each grade level. If these students are then assigned more or less at random to classrooms (which is not often a safe assumption – though some district administration did say this was how they went about creating elementary classrooms) then this can provide a measure of average classroom diversity. Note that this same activity is worth doing at the individual classroom level as it will provide administrators and classroom teachers with an idea of just how diverse the learning needs are (or learning readiness) that a teacher must try and meet if all students are to learn. This is also the perspective that educator effectiveness will take – comparing all starting scores to scores obtained at the end of the year – in order to determine the student outcome side when evaluating a given teacher.

As an example, in 2011 – 2012 there were 504 students in fifth grade in Elmbrook. Taking the scores listed above shows that about 2% of these students scored at a level well above

proficient for an eighth grader (2+ standard deviations above the district average). This means that about ten students in the district (solely based on math content mastery) would benefit from multi-year grade acceleration (as far as 8th grade-level content). It's also likely that even the best educator will struggle to challenge these students in a fifth-grade level math class. These students have likely mastered much of algebra. However, even more fifth graders – those not as advanced (+1-2 standard deviations) could benefit from a lessor degree of math acceleration. Roughly 14% of district fifth graders scored above the proficient level for sixth graders. This means that more than 70 students across the district have mastered math content that is two years advanced. These data serve as an indicator of existing need. Many students in Elmbrook currently need content that is significantly above (many years above) what Wisconsin or NWEA sees as "grade-level" content. The district should use this information to plan curricular offerings and specialized programming at the advanced end just as it would at the remedial end of the RtI spectrum.

In some ways the district has already implemented some specialized curricular offerings to address an obvious need for advanced content in math. A perfect example is the early opportunities for students to take AP Calculus courses as well as the offering of a Calculus 3 course at the 10th-grade level. This is an ideal response to the math data described above. The district also offers courses such as AP Calculus AB and BC at levels earlier than they are normally offered in order to better match student need and readiness with appropriate curriculum. This matching of observed student need (through assessment data) with appropriately-challenging curriculum should be the basis (though not sole consideration) for all curriculum.

Internal Evaluation

Particularly in the area of math, Elmbrook has many students who are achieving at high levels compared to the state or national average. With a new focus on student growth in terms of educator effectiveness and school report cards, the district should begin a systematic and ongoing evaluation and reporting of growth among its highest achieving students. What would be worth considering is to what degree students at the 90th or even 80th percentiles are growing in their content mastery from Fall to Spring and then from Spring to Fall (to check for differences in school-related vs. home learning). Nationally, students at the highest achievement level are making smaller achievement gains in schools than some lower-achieving students and they tend to make as much growth over the summer as over the school year. This indicates that these students tend to learn despite school; not because of it. Elmbrook could easily evaluate the degree of growth among its top learners as a way to determine holes in existing curriculum and/or programs and courses that are needed in order to assure all students are learning. NWEA MAP data are ideal for this task as they are vertically-scaled and equal-interval scores.