DIBELS® 8TH EDITION

UNIVERSITY OF OREGON | College of Education

Dynamic Indicators of Basic Early Literacy Skills 8th Edition

Revised Zones of Growth for 2022 DIBELS 8th Edition Benchmark Assessments

CTL Center on Teaching & Learning

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Technical Report 2202

Revised Zones of Growth for 2022 DIBELS 8th Edition Benchmark Assessments

This report describes the rationale for, and calculation and utility of, the Zones of Growth (ZOGs) metrics for DIBELS 8th Edition (i.e., DIBELS 8) subtests. ZOGs are a feature of DIBELS 8 that helps users quickly compare the reading skill growth of their students over the course of the school year to that of a nationally representative sample of students with similar beginning of the year (BOY) benchmark scores. ZOGs are intended to help users set realistic growth goals for students and interpret student progress towards those goals. This report describes (a) why users may find the ZOGs framework useful, (b) how DIBELS 8 ZOGs were estimated, (c) how ZOGs promote databased decision-making, and (d) how ZOGs are integrated into the mCLASS and DIBELS Data Systems for an improved user experience.

Why are Zones of Growth Useful?

Educators, researchers, and policymakers are increasingly interested in better understanding and monitoring the development of students' academic skills over time. Monitoring development, or growth, can serve multiple purposes. It can be used to promote accountability, inform data-based decisions, and facilitate collaboration within and between schools. Many schools now set individual growth goals for students to determine whether the student, and correspondingly, the teacher and school are making adequate yearly progress towards state or national standards. Some state accountability systems even automatically generate end of year growth targets for the summative assessment using student assessment data. Schools are also increasingly using multitier systems of support to inform instruction and ultimately, improve student learning. In such systems, data on student growth may be used to inform decisions about resource allocation, instruction and intervention (January et al., 2018;

Jenkins et al., 2007; Pentimonti et al., 2017). For instance, if a student is exhibiting signs of risk, the student may receive small group or one-on-one instruction.

DIBELS 8 ZOGs provide timely information about the rate at which a student's reading skill is growing, and normative information about the extent to which that growth is faster or slower than their peers with similar BOY skills. By comparing how much growth a student has made relative to normed growth trajectories, DIBELS 8 users can rapidly infer whether a student is making adequate progress or requires additional support. For instance, if a student's growth on Oral Reading Fluency (ORF) exceeds the growth of 90% of their similarly scoring peers, it suggests that the student is likely to be receiving adequate instructional support. In contrast, a slower trajectory may indicate that additional support is warranted. In the following section, we explain how DIBELS 8 ZOGs are estimated, what they represent, and how they can be used to promote data-based decision-making.

How were the Revised 2022 DIBELS 8 Zones of Growth Estimated?

We chose to update the DIBELS 8 ZOGs for the 2022-2023 school year for two reasons. First, with DIBELS 8 now in wide use across the U.S., we believed it was important to update the ZOGs using data collected from a larger and more representative sample. The original data used to establish DIBELS 8 ZOGs were collected during the 2017-2018 and 2018-2019 DIBELS validation studies, which yielded a nationally representative sample of 8,997 students in kindergarten through grade 8 from 48 schools in all nine Census divisions. Data for the revised 2022 ZOGs were collected during the 2021-2022 school year and the sample includes 2,869,626 students from all 50 states and both the mCLASS and DIBELS Data Systems. Second, we wanted to reflect the current nationwide distribution of scores after a period of unprecedented disruption and challenge to typical instructional practices.

To calculate ZOGs, we used data from six DIBELS 8 measures: Phonemic Segmentation Fluency, Nonsense Word Fluency, Word Reading Fluency, Oral Reading Fluency, Maze, and the DIBELS 8 Composite. Descriptions of, and technical details regarding these measures are provided in the DIBELS 8 technical manual (University of Oregon, 2019). For each grade and measure, BOY benchmark scores from the combined sample were clustered into one of five *initial status* groups. These groups indicate whether a student's BOY score was:

1. Below the 20th percentile,
2. At or above the 20th percentile but below the 40th percentile,
3. At or above the 40th percentile but below the 60th percentile,
4. At or above the 60th percentile but below the 80th percentile, or
5. At or above the 80th percentile.

A gain score was then computed for each student and measure by subtracting the BOY benchmark score for a given measure from the end of year (EOY) benchmark score for that same measure. These gain scores were then used to identify ranges of *normative percentile gain*s within each *initial status* group. That is, gain scores in each group were evenly divided into quantiles, such that 20% of scores fell into the first quantile, the next 20% fell into the second quantile, and so on, resulting in five *growth zones* for each *initial status* group, each of equal size.

To facilitate the interpretation of ZOGs, we provide descriptive labels for each zone. Table 1 provides an illustrative ZOG table for Oral Reading Fluency in Grade 1. Within each *initial status* group, a gain score that falls between the 40th and 59th percentile is described as falling within the *Average* growth zone. Similarly, scores that fall between the 60th and 79th percentile are described as *Above Average*, whereas scores above the 80th percentile are described as *Ambitious*. We do not describe *Below Average* or *Well Below Average* growth, both because they can be inferred from the other zones, and because users are unlikely to set below

average growth targets for their students. The raw gain scores listed to the right of the description of each zone represent the minimum amount of growth required to reach that zone. For example, average growth for the first initial status group is any Oral Reading Fluency gain score between 18 and 24 points.

Table 1

Oral Reading Fluency Zones of Growth by Initial Status Group

Grade	Initial Status Group	Zone of Growth	Raw Gain
1	1 (< 20th)	Average	18
		Above Average	25
		Ambitious	37
	2 (20 – <40th)	Average	27
		Above Average	37
		Ambitious	57
	3 (40 – <60th)	Average	42
		Above Average	57
		Ambitious	73
	4 (60 – <80th)	Average	57
		Above Average	68
		Ambitious	83
	5 (80th +)	Average	46
		Above Average	59
		Ambitious	74

How do ZOGs Promote Data-based Decision-making?

The estimation procedure for DIBELS 8 ZOGs promotes data-based decision-making in two primary ways. First, ZOGs can inform decisions about instruction and intervention by providing normative information about growth. This information is especially important in schools that implement multitier systems of support, in which, educators need to evaluate the

extent to which an instructional approach is working, so they can decide whether it should be continued, discontinued, or intensified. Traditional scores based on a single point in time are limited in their ability to inform such decisions, because they describe a student's status rather than their development over time. This is true even for scores with excellent predictive validity. For instance, a cut-score may accurately predict that a student is unlikely to meet end of year proficiency standards based on its relation to an external criterion measure. However, it is important to know how quickly a student is growing, even if they are not on track to meeting predefined criteria, because accurate inferences must still be made about the impact of instructional delivery.

ZOGs also promote inferences that account for the skills a student possesses at the beginning of the school year. This is important when evaluating student development because prior research indicates that growth is often related to initial status, but not necessarily in a straightforward manner (e.g., Clemens et al., 2018, 2019; Fien et al., 2010). For example, Table 1 clearly illustrates that expected growth on Oral Reading Fluency depends on the student's initial status. When comparing the scores needed to reach a given zone of growth (e.g., *average*) across initial skill groups, students in Initial Status Group 4 improve more over the course of a year, on average, than do students in any of the other Initial Status Groups. This pattern reflects the non-linear complexity of real-world growth. Students in this group likely have a stronger grasp of the necessary component skills than do students in the lower groups and are less limited by the soft ceiling of a fluency measure than are students in the highest initial status group, who enters Grade 1 as fluent or nearly fluent grade level readers and thus have less room to improve on that skill over the course of the year. In short, ZOGs are useful because they provide DIBELS

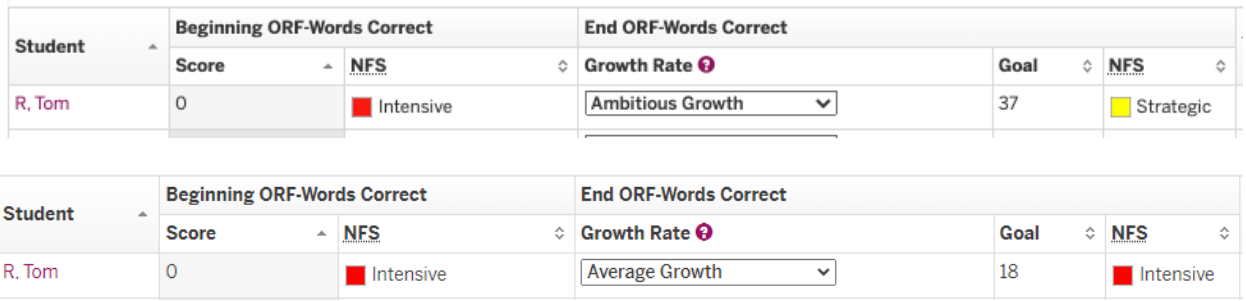
8 users with a straightforward metric of growth that accounts for differing patterns of growth across measures, grades, and initial ability level.

Zones of Growth in the mCLASS and DIBELS Data Systems

The mCLASS and DIBELS Data Systems offer streamlined tools to help users set student growth goals and monitor progress towards those goals. The following examples illustrate the tools available in the DIBELS Data System (DDS), but similar functionality is also available in mCLASS. Using the Zones of Growth Student Goal Data Entry tool, users can select an *average*, *above average*, *ambitious*, or custom growth goal for each student for a given measure. The DDS then provides the user with the target score in the "Goal" box. For example, in Figure 1, a user has selected an ambitious growth goal for Tom, a Grade 1 student. Tom started the year with an ORF score of 0 and likely needs intensive intervention to meet end of year proficiency standards. If Tom reads at least 37 words correct per minute (WCPM) by the end of the year, he will have moved from the intensive need for support (NFS) to the strategic NFS and grown faster than 80% of students in the mCLASS and DIBELS Data Systems. This represents an ambitious, but instructionally meaningful goal, one we know is achievable by a substantial proportion of students. In contrast, if Tom were to make only average growth for a student who began the year reading 0 WCPM, he would end the year reading 18 WCPM and remain in the intensive NFS.

Figure 1

Illustration of the DIBELS Data System Growth Goal Setting Tool



Figures 2 and 3 illustrate two complimentary ways of using the DDS to evaluate growth goals after EOY data has been collected and entered. Figure 2 depicts an evaluation of individual growth and shows in the two rightmost columns that not only did Tom, the grade 1 student illustrated in Figure 1, meet the ORF goal set for him, he did so by growing at a rate higher than more than 80% of his peers with similar BOY skills, and in the process, moved from the intensive NFS to the benchmark NFS. In contrast, Dylan, who had the same BOY score, demonstrated growth that was slightly below average (i.e., 16 WCPM), and did not meet the goal set for her.

Figure 2

Depiction of DIBELS Data System individual growth evaluation report

Student	ORF-Words Correct Beginning Score	ORF-Words Correct End Score	Zones of Growth			Growth %-tile
			Growth Rate	Goal	Met Goal	
S, Dylan	0	16	Ambitious Growth	37	No	20th-39th
R, Tom	0	41	Ambitious Growth	37	Yes	80th-99th

Figure 3 depicts one way to evaluate literacy growth at the systems level and summarizes for a classroom or school the number and proportion of students with growth goals set, the number and proportion of students who met their goal, the number of students whose growth fell in each of the five growth zones, and the number of students who met their established goal, subset by goal type.

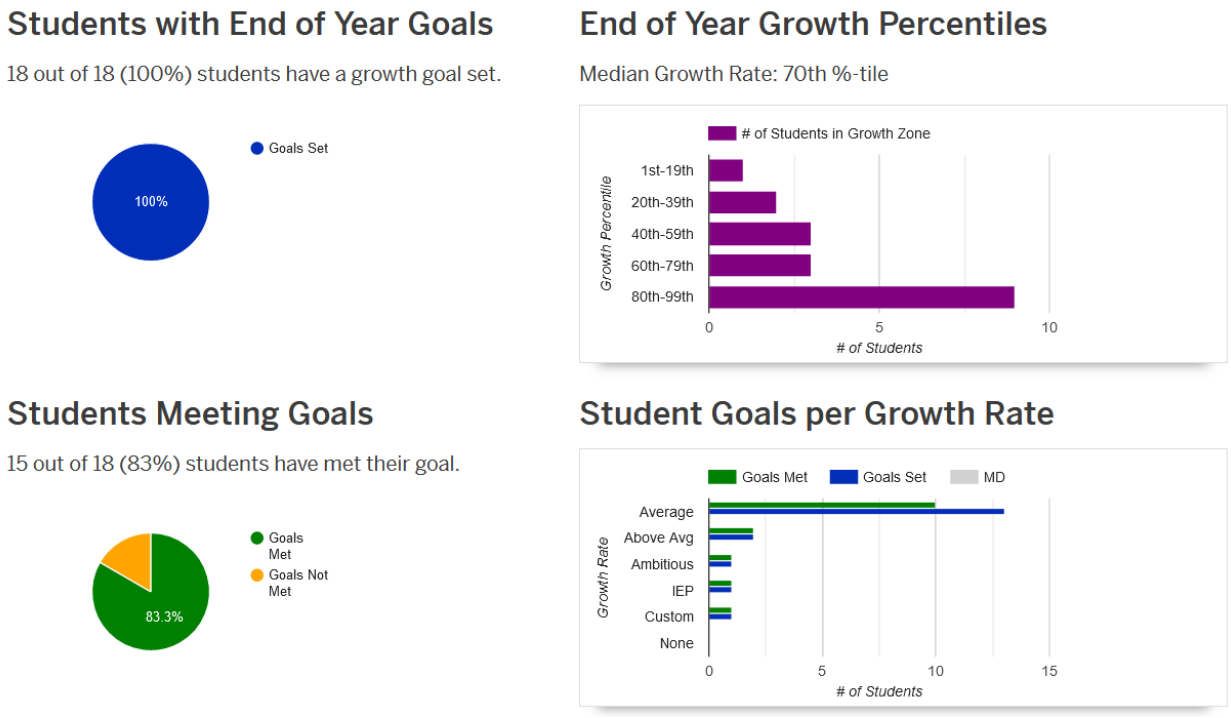
Summary

The DIBELS 8 Zones of Growth feature provides users with a streamlined way to set ambitious, yet achievable growth goals for all students and a robust and nuanced way of evaluating whether students meet those goals. These data promote data-based decision-making by helping teachers and schools make informed decisions about instruction and intervention,

allowing them to have confidence in knowing whether and to what extent an instructional approach is working as intended, so that the approach can be continued, discontinued, or intensified as needed.

Figure 3

Depiction of the DIBELS Data System Systems-level Growth Evaluation Report



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