Steps for Success

Making Instructional Decisions for Students' Essay Writing

Kelley Regan, George Mason University,
Anya S. Evmenova, George Mason University,
Amy Hutchison, George Mason University,
Jamie Day, George Mason University,
Madelyn Stephens, George Mason University,
Courtney Verbiest, George Mason University, and
Boris Gafurov, George Mason University

TEACHING Exceptional Children, Vol. 54, No. 3, pp. 202–212. DOI: 10.1177/0040059921001085

Sama, a seventh-grade student with a learning disability, struggles to organize her ideas when writing and to convey her opinion clearly when composing a persuasive paragraph. She often becomes frustrated with the writing process, and the thought of writing an essay is intimidating. Ms. Blackwell, her special education teacher, is preparing to teach a unit on persuasive writing. The post-unit assessment involves independently writing a complete persuasive essay. Ms. Blackwell understands that Sama, and many of her other students, will become discouraged during the essay-writing process. In addition, the school district's standards consist of integrating technology within the writing curriculum. Each middle school student has a personal Chromebook that can be used for instructional purposes. Ms. Blackwell decides to administer a persuasive essay pretest to her students on their Chromebooks. She assigns a pretest prompt: "Should 10-year-olds be allowed to stay at home alone?" ***Figure 1*** *shows what Sama wrote. Ms. Blackwell sees the errors in Sama's writing but does not know how an error analysis of the students' writing could translate to improve practice and student performance.*

The ability to transform data to instructional action is called instructional decision making or pedagogical literacy (Mandinach, 2012). Results show that when school teams or individual teachers engage in data-driven decision making (DDDM; Park & Datnow, 2017; Reeves & Chiang, 2018) or data-based individualization (DBI; Jung et al., 2018), student achievement improves. For writing instruction, special education and general education teachers may use curriculum-based measures as data to inform students' writing fluency and sentence writing (McMaster & Espin, 2007). These general outcome measures may include the number of correct writing sequences, words written, and words spelled correctly (Dombek & Al Otaiba, 2016). Recent research in the area of early writing indicates that with professional development, teachers significantly improved their knowledge and skills of DBI, and as a result, early elementary student writing outcomes are promising (Lembke et al., 2018). The Early Writing Project (earlywritingproject.org) may be particularly helpful for teachers who need to support students at the letter, word, or sentence level.

Whereas curriculum-based measurement writing (CBM-W) measures allow teachers to effectively monitor student progress at the letter-, word-, sentence-, or paragraph-writing level, CBM-W is more widely researched with beginning or early writers, and some of these metrics in isolation (e.g., words written) do not represent overall writing quality (Allen et al., 2018). To add complementary information to data gleaned from CBM-W (i.e., semantics, syntactical features), teachers can also use informal assessments of students' paragraph-level writing that include work samples, writing portfolios, conferences, and rubrics (Romeo, 2007).

A *rubric* is a succinct, organized description of levels of quality related to the performance of an assignment or task (Andrade, 2000). Although rubrics are often narrowly viewed as a guide for grading a specific assignment, the reality is that rubrics are dynamic and can be used to assess a process or a product (Brookhart, 2013; see Schirmer & Bailey, 2000, for examples). All rubrics are made up of two basic components: (a) criteria that explain the focus of the assignment and (b) "gradations of quality, with descriptions of strong, middling, and problematic work" (Andrade, 2000, p. 14).

Rubrics can be a tool used with students in the learning process or a tool used by teachers for evaluating student work and making instructional decisions. Rubrics make the grading process more transparent, provide students with formative feedback so that they can revise their work (Panadaro & Jonsson, 2020), and can provide students with evaluative feedback on a final submission (Andrade, 2000). Rubrics can encourage students' critical thinking, self-monitoring, and self-evaluation when teachers pair rubrics with guided self-assessment. Using rubrics can help develop students' thinking and learning by teaching them how to critically evaluate and improve their work using the criteria provided (Andrade, 2000; Brookhart, 2013). Rubrics also reduce students' anxiety and improve students' self-efficacy (Panadaro & Jonsson, 2020). For teachers, rubrics make grading less ambiguous, more efficient, and reliable (Andrade, 2000). This is especially helpful when explaining a grade or an instructional plan to a parent (Swain & Friedrich, 2018). Although rubrics are not technically adequate to be a measure of progress monitoring (Heldsinger & Humphry, 2013; McMaster & Espin, 2007), there is an evidence base demonstrating their effectiveness in evaluating student writing (Harmey et al., 2019; Hodges et al., 2019).

Figure 1 **Sama's pretest**

I think 10-Year-old can not. Because I think they should be like 15 To stay home alone Because I think 15 year old can be more mature. but 10 years old can try like 3 time stay home alone but don't open the door if someone come to it and don't be loud and crazy.

By Sama

Types of Rubrics

There are two primary types of rubrics: holistic and analytic rubrics. Holistic rubrics look at all aspects of the assignment together to make a general judgment about the work. There is only one score provided, so the assessment tends to be based on general impressions of an assignment. For example, in a persuasive writing assignment in which a teacher is using a holistic rubric, the teacher may base the final score on how persuasive the student was overall. The rubric score could be a letter grade, a percentage, or a raw score. Whereas one score may be more efficient when grading, holistic rubrics typically do not provide specific feedback (Brookhart, 2013). One common practice with holistic rubrics is to use anchor papers—papers that are scored in advance by the rubric experts and are then used as models to demonstrate different levels of performance according to the rubric (Swain & Friedrich, 2018).

Analytic rubrics look at each criterion as a separate entity (Brookhart, 2013). For persuasive writing, an analytic rubric might have four criteria: (a) statement of the argument, (b) support with evidence, (c) organization and development, and (d) use of written language. A typical sequence would be for the student to effectively state their argument prior to addressing the evidence. A rubric that has criteria that are logically sequenced can help teachers provide more targeted instruction in manageable steps. Also, analytic rubrics assist students to

remember important components of writing and to see the discrete skills they need to improve upon (Bradford et al., 2016). Further evidence supporting use of analytic scoring is the Analytic Writing Continuum (AWC) assessment system developed by the National Writing Project (2010) and the 6+1 Trait writing rubric (Northwest Regional Educational Laboratory, 2007). The widely used AWC and the 6+1 Trait writing rubric utilize both holistic scoring to provide one summary score of student writing as well as analytic scoring to provide a score for each individual component of the writing genre and to provide useful information for guiding instructional decisions (Bang, 2013; Coe et al., 2011; Swain & Friedrich, 2018).

Although teachers use writing rubrics in the classroom (e.g., Swain & Friedrich, 2018), a concern is that when general education and special education teachers use rubrics as an assessment tool, they may not have the knowledge as to how to make effective data-driven instructional decisions at the classroom level (Dunn et al., 2013). For example, teachers may identify students' specific writing skill deficits (e.g., lack of composition structure) or the self-regulatory skills (e.g., lack of self-monitoring) that may be impeding a student's writing behavior, but they may struggle to systematically and logically sequence the varied aspects of writing instruction. Teachers may also be puzzled as to why the student is not responding to instruction. Just as students need a model and guidance when using a strategy, research indicates that teachers need training in both the development and implementation of rubric use (Swain & Friedrich, 2018). Panadaro and Jonsson (2020) assert that it is not simply *if* a rubric is used but *how* the rubric is used.

The purpose of this article is to demonstrate practical implementation of DDDM by teachers when assessing students who are writing at the paragraph level. Specifically, we will illustrate how teachers can effectively assess students' writing progress using an analytic rubric, targeting specific paragraph-writing skills relevant to the persuasive writing genre, and identify an instructional decision that matches the targeted writing needs of a student. We include an explicit example of a selected intervention that a special education teacher, Ms. Blackwell, will implement with her student, Sama, and then we describe each step the teacher works through in the DDDM process.

The DDDM Process

The DDDM process is highly relevant for educators of students with disabilities who use data to provide individualized and targeted, high-quality writing instruction. Informed by the work of Mandinach and Gummer (2016), we propose six steps for teachers to follow in the DDDM process when using rubrics to assess student essay writing: (1) collect baseline data to determine instructional needs in writing, (2) implement (with fidelity) a validated intervention to support students' writing needs, (3) assess student essay-writing skills, (4) use the data to inform an instructional decision, (5) adapt the intervention as needed, and (6) continue to evaluate student progress.

Step 1: Collect Baseline Data

Baseline data provide a starting point for a teacher to identify students' writing characteristics. Because writing is multifaceted, teachers may want to observe several writing samples to determine any patterns across written responses. Also, a student's writing performance may vary by genre (i.e., story writing, persuasive, argumentative), so it is important to observe writing samples from similar types of writing prompts. After the student produces a writing sample, a teacher can score the student's response with an analytic rubric to characterize the student's strengths and areas of need when writing. Let's see what Ms. Blackwell learns after collecting baseline data for Sama.

After reviewing Sama's pretest, Ms. Blackwell sees that Sama's writing lacks clarity of ideas and does not include crucial components of a persuasive essay that the co-teacher had reviewed and modeled for the class. In addition, Sama's writing has infrequent punctuation, and she often begins sentences with the word "Because." Ms. Blackwell determines that Sama will need a targeted writing intervention that can mitigate the noted challenges.

Step 2: Determine and Implement a Validated Intervention to Support Students' Writing

When selecting an intervention to meet a student's needs, there are several things to consider (Iris Center, 2014). Foremost, the intervention should have a research base to support its use in the classroom. Also, the established research should have been conducted with students who share similar characteristics with those you are considering for the intervention. When employing strategies that are validated by empirical evidence, teachers can be confident that their teaching is more likely to improve student outcomes. Another recommendation prior to selecting an intervention is to determine if the research outcomes of an intervention's implementation align with what you wish to achieve for a student(s). Finally, be sure that the intervention fits within the context of your classroom. If the intervention is not intended for small-group delivery or special training is involved prior to implementation, it may not be the best fit. Other considerations in the digital age may include if or how the intervention integrates with technology, for both the teacher and the student. Using technology to support instruction across all phases of writing is a key evidence-based method for supporting struggling writers (Graham & Perin, 2007). Among the various types of writing tools with features that are easily integrated into instruction and have a research base is a technology-based graphic organizer, or TBGO.

The TBGO described in Evmenova and Regan (2019) is available in three platforms (i.e., Word, app, and a web-based Chrome version), offers three writing genres (i.e., persuasive, argumentative, and narrative), and is suitable for students who have initial paragraph-writing skills but may struggle with topic selection, generating ideas, generating relevant reasons and explanations, and maintaining overall cohesiveness of a paragraph. Student use of the TBGO to improve writing outcomes has been investigated among students with emotional and behavioral disorders (Evmenova et al., 2016), English language learners (Regan et al., 2019), and students with and without learning

> The teacher dashboard helps the teacher collect data, store the data, and design writing instruction for individual students.

disabilities across Grades 3 to 12 and across instructional settings (Regan et al., 2016, 2017). Evidence consistently suggests that following instruction and sufficient opportunities to practice using the TBGO, students with and without disabilities improve the quality of their writing, and students with disabilities and English language learners also increase the quantity of their writing. Students were also able to maintain these gains after the TBGO was removed. In addition, students' attitudes toward writing using the TBGO were very positive. The TBGO embeds multiple features that support students' transcription, text generation, and self-regulatory skills. Students are guided through the process of composing a persuasive paragraph by first strategically selecting a writing prompt and a goal for their writing. They are then offered a selection of strategies in order to brainstorm ideas in response to a prompt. A mnemonic, incorporated into the TBGO, helps students organize their ideas and include important persuasive essay elements. Writing complete sentences and checking off each of those elements on the self-monitoring checklist follows. After the separate sentences are automatically copied into a cohesive essay, students can use text-to-speech (TTS) to review and edit their work. Finally, self-evaluation is the last step in the TBGO. The TBGO is compatible with Chrome browsers, and it embeds technology features, such as audio comments, text hints, drop-down menus of transition words to help build cohesion among sentences, a TTS feature that is accessible throughout the writing process, and different video models that are described later.

Within the TBGO intervention is a feature that teachers can use to assess student writing and student use of the TBGO features. We refer to this as the teacher dashboard. The dashboard helps the teacher collect data, store the data, and design writing instruction for individual students. The process is parallel to the one used by teachers who elect to have nondigital student writing portfolios, use paper-based rubrics, or choose to develop written instructional plans. A teacher may request free access to the described TBGO (see https://wego.gmu.edu). Let's see how Ms. Blackwell determines a validated writing intervention to use with Sama.

Given what she knows about technological supports for student writing, Ms. Blackwell considers the use of a technology-based intervention. Sama has a Chromebook for writing at school and home, and Sama can access TTS on her Chromebook. Ms. Blackwell would like to use a digital tool that has scaffolded features for writing key components of a persuasive essay, such as generating a topic sentence, supporting reasons with details, and constructing a summary. She knows that a graphic organizer could assist Sama with sequencing and writing sentences that logically connect. Helping Sama break up the writing process into more manageable parts may also relieve her writing anxiety. Ms. Blackwell would also like to select an intervention that embeds self-regulated learning strategies so Sama can independently persist through the writing process. Finally, Ms. Blackwell, like many teachers, needs help collecting individual student writing data to determine her next instructional steps. She wants to use a digital writing intervention that perhaps stores and organizes Sama's writing samples. Ms. Blackwell selects the aforementioned TBGO (Evmenova et al., 2020). With the teacher dashboard, Ms. Blackwell can easily make data-driven decisions to personalize and improve Sama's learning and writing performance. Teaching Sama all of the features within the TBGO will take a few days, but with modeling and ample practice opportunities to use the TBGO and experience success, Ms. Blackwell is convinced that Sama will be able to independently compose a high-quality persuasive paragraph.

Step 3: Assess Student Writing

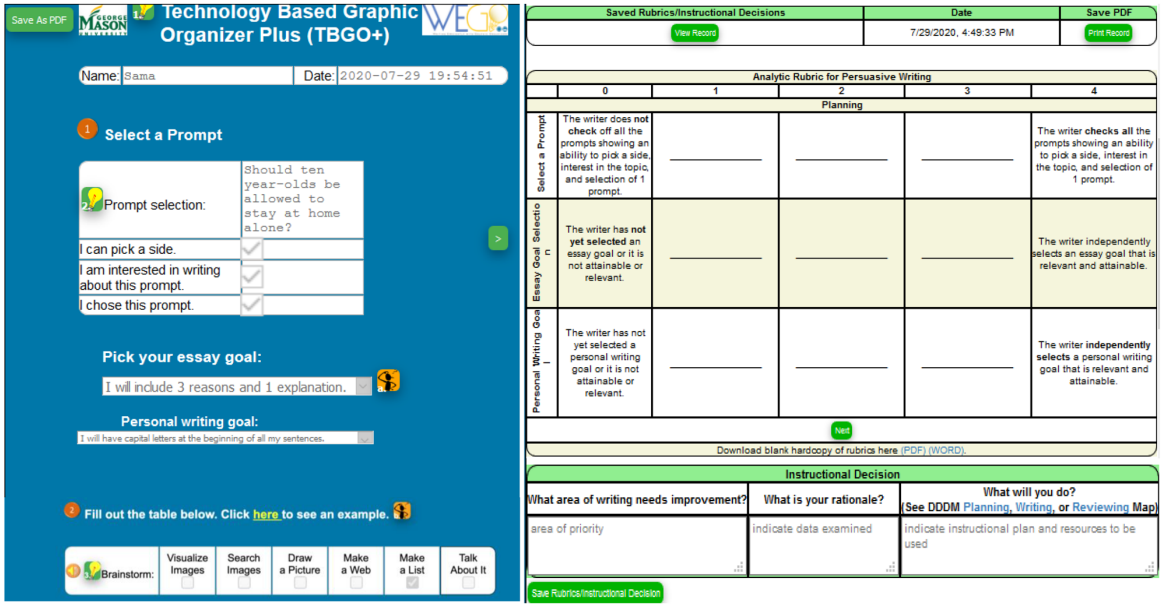
To evaluate student writing and improve writing outcomes, there is evidence to support using general outcome measures (e.g., number of correct writing sequences), and there is evidence demonstrating that analytic rubrics are effective, valid, and reliable measures of writing performance (Harmey et al., 2019; Hodges et al., 2019). The CBM-W measures referred to earlier can supplement the rubric data and collectively be used to inform intervention planning (Allen et al., 2018). When a teacher designs a rubric, it should be highly aligned with the genre of writing and the selected intervention. WritingA-Z.com provides completed examples of writing rubrics across genres, but teachers can create custom assessments using free accessible tools found at Rubric-maker.com or Rubistar.4teachers.org. The writing rubric is most functional when mapped onto student work samples. Teachers can then easily identify patterns of success across the writing samples as well as any instructional content to address for an individual student. A teacher scores each writing sample using the rubric. The purpose of the analytic scoring rubric is to

> The writing rubric is most functional when mapped onto student work samples. Teachers can then easily identify patterns of success across the writing samples as well as any instructional content to address for an individual student.

Table 1 **Rubric Categories**

Planning section	*Writing section*	*Reviewing section*
Select a prompt	Identify your opinion	Revise: Word selection
Essay goal selection	Determine reasons	Revise: Grammar and spelling
Personal writing goal	Explain why or say more	Edit: Punctuation
Brainstorm	Add transition words	Edit: Capitalization
	Summarize	Edit: Evaluate
	Check your work	

Figure 2 **Technology-based graphic organizer teacher dashboard**

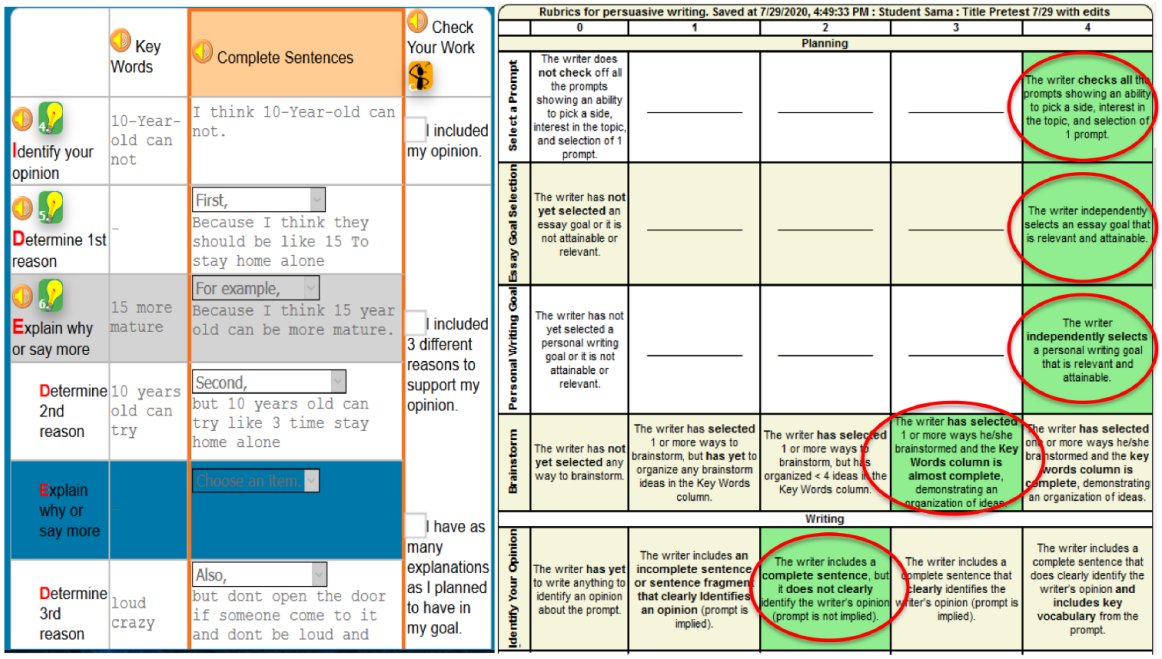


> When a students' performance is adequate to instruction or strays too far away from the desired outcome, the decision rules should clearly communicate to the evaluator when to continue or stop and make an instructional decision.

assist teachers in carefully selecting instructional foci, one at a time, that is aligned with students' needs. As teachers use the rubric to evaluate student writing, there are data-driven decision rules that a teacher would follow. The decision rules, typically established by the users of the rubric, are made with the learning objectives or goals in mind. When a students' performance is adequate to instruction or strays too far away from the desired outcome, the decision rules should clearly communicate to the evaluator when to continue or stop and make an instructional decision. When a teacher uses CBM-W measures, point- or trend-based decision rules can be used (Jung et al., 2018). When using a rubric, a particular rating on a Likert scale that is assigned to instructional foci may serve as the rule to make an instructional decision.

In our example of the TBGO, there are three major sections of the embedded rubric: Planning, Writing, and Reviewing. These three sections have been intentionally designed to represent a

Figure 3 **Scored rubric with Sama's technology-based graphic organizer**



progression of foundational skills within the persuasive writing process and with the flexibility to assess persuasive writing across grade levels. There are criteria within the rubric that are unique to the TBGO, such as the use of embedded self-regulatory strategies (e.g., essay goal selection). See ***Table 1*** for the sequence of categories per rubric section.

Although the rubric is extensive, only one skill at a time is shown within the rubric on the teacher dashboard. For example, when using the TBGO's rubric, the rule or goal is for a student to earn a score of 3 or 4 before the next skill in the sequence is scored. On the 5-point scale, a score of 3 or a 4 is the desirable threshold for a student who is using the TBGO to compose a persuasive essay. If a student scores a 0, 1, or 2, a notification will appear that directs the teacher to make an instructional decision. These decision-making rules were established during and after the TBGO's rubric development by a collaborative team of researchers and teachers using an iterative design process. Let's see how Ms. Blackwell evaluates Sama's writing.

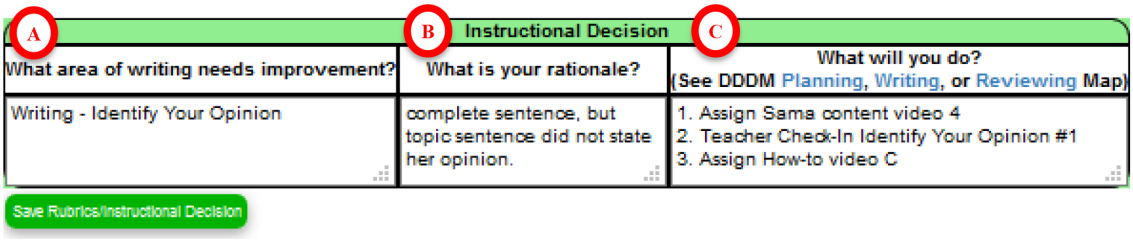
Prior to Sama's independent use of the intervention, Ms. Blackwell taught Sama an introductory lesson on persuasive writing, introduced the TBGO tool, and reviewed the features embedded within the tool. After Ms. Blackwell modeled writing with the TBGO and provided Sama with several guided writing sessions, Sama was ready to try using the TBGO to write a persuasive paragraph on her own. During her first independent writing session, Sama created a new persuasive response. Ms. Blackwell is now ready to review the completed TBGO and assess Sama's writing progress. She selects the persuasive paragraph that Sama independently wrote with the TBGO that morning. ***Figure 2*** *shows a small portion of what the teacher dashboard looks like when Ms. Blackwell opens Sama's completed TBGO. Sama's work in the TBGO is on the left, and the section for Ms. Blackwell to evaluate and monitor Sama's work is on the right. Ms. Blackwell scrolls down to see the completed TBGO and summary paragraph. She selects the Next button to advance to the next category in the rubric.*

While reviewing Sama's essay, Ms. Blackwell uses the persuasive writing rubric provided within the teacher dashboard. The teacher dashboard stores and organizes students' writing samples, writing rubrics, and data on students' use of the TBGO features. When a student completes a response within the TBGO, their work is automatically saved both as a graphic organizer and as a final summary paragraph. In the teacher dashboard of the TBGO, the teacher can select an individual's TBGO alongside a copy of a blank rubric. This side-by-side layout is a simulation of how many teachers score paper-based student essays with a writing rubric.

In her TBGO, Sama has independently selected a prompt, a relevant and attainable essay goal, and a relevant and attainable personal writing goal. She has also selected "Make a list" as the way she brainstormed ideas. Ms. Blackwell facilitated this brainstorm in class. The list of ideas was then organized in the "Key Words" column of the TBGO. All of these sections of the writing process with the TBGO are evaluated with the Planning section of the rubric, and Ms. Blackwell provides Sama with a score of 3 or 4 in all of these areas (see ***Figure 3****).*

Within the Writing section of the TBGO across from "Identify your opinion," Ms. Blackwell sees that Sama has written a complete sentence, but it does not clearly state her opinion. She wrote, "I think 10-year-old cannot." As a result, Ms. Blackwell selects a score of 2 for "Identify your opinion." Ms. Blackwell also notices that Sama has not used the self-monitoring checklist in the TBGO. As can be seen in ***Figure 3****, none of the boxes in*

Figure 4 Instructional decision



> Decision-making maps have potential to provide a pathway for teachers to analyze student work in a more systematic way.

the "Check Your Work" column are marked. The teacher reminds herself to address this with Sama in class because self-monitoring one's progress during the writing process is a crucial self-regulatory skill for task completion and independent learning (Graham & Perin, 2007). When Ms. Blackwell selects the 2 in the rubric row for "Identify your opinion," a prompt comes up that tells her, "This is your first score of less than a 3 (i.e., no Instructional Decision area of priority has been entered yet). You can stop scoring now or continue, BUT you should complete your Instructional Decision around this item: 'Writing—Identify Your Opinion.'" Per the instructional decision rules, Ms. Blackwell is now ready to make an instructional decision for how to better support Sama in developing her persuasive writing skills and, specifically, in writing a complete and clear topic sentence that states her opinion.

Step 4: Use Data to Inform an Instructional Decision

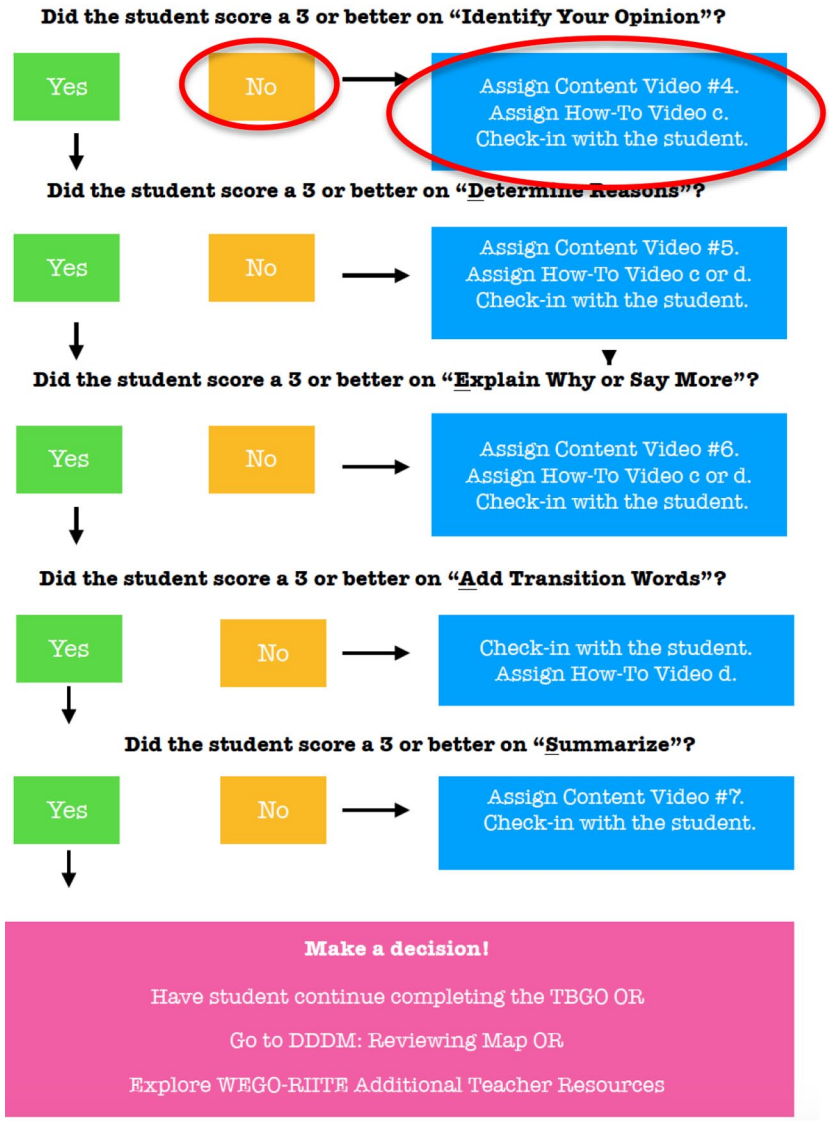
Differentiated instructional decisions are essential for student growth in the writing process. After assessing student performance, teachers can use the data to individualize instruction. Specifically, a teacher would identify a skill to target based on student data, consider the rationale for their score, and make an instructional decision. The area of need and rationale can be determined by referring back to the student's score on the analytic rubric and the details included in the criteria description. Instructional decisions can be made if a teacher can strategically match instructional resources to the targeted skills. To do so, an explicit decision-making guide or map (as seen in ***Figure 4***) may be particularly helpful for novice teachers, whereas more experienced teachers may not need this level of support. Decision-making maps have potential to provide a pathway for teachers to analyze student work in a more systematic way.

In the example of the TBGO's teacher dashboard, there are three DDDM maps that correlate to the different writing stages of Planning, Writing, and Reviewing. ***Figure 4*** shows the DDDM map for the Writing section of the rubric. The maps prompt the teacher and then provide varied instructional options that a teacher can choose from based on a yes-or-no response. The instructional decision options in the TBGO example include accessing and assigning content video models, how-to video models, and teacher check-in options. Each is described.

Assigning content video models. One of the possible instructional decisions in the DDDM maps is to direct students to watch one of the content videos embedded in the TBGO to help explain specific aspects of the writing process. There are nine content videos embedded in the TBGO, and each one addresses an instructional focus area related to persuasive writing (e.g., "Determine Reasons"). The videos were designed and validated through an iterative design process involving multiple focus groups of teachers, experts of writing instruction, and students with disabilities (see https://wego.gmu.edu). The material in the video provides the student with considerations and information that explicitly illustrates a concept with examples and nonexamples. Using technology, such as instructional videos, can accelerate students' learning, increase motivation and engagement, and improve self-efficacy (Chambers et al., 2008). However, the length of an instructional video matters; if the video is too long, the effects decrease or are eliminated (Van der Meij, 2017). In addition, videos should not replace but should complement teacher instruction and strategically reinforce student learning (De Bruyckere et al., 2016). In addition to the content video models, there are video guides found at https://wego.gmu.edu/resources.html that offer teachers instructional suggestions for minilessons and remediation activities based on students' needs. Each content video in the TBGO is indicated by a green icon that contains a light bulb and the video number (see ***Figure 2*** for Content Video 2). Consistent with research on video modeling, the content videos are relatively short, ranging from 2 to 6 minutes.

Assigning how-to video models. Sometimes a student's performance is negatively impacted because of difficulty navigating the features of an intervention, in this case, the TBGO. If this scenario applies, the teacher can assign a how-to video to

Figure 5 Data-based decision-making: Writing map



review the purpose and navigation of the TBGO features. There are seven how-to video models embedded in the TBGO. In contrast to the content video models, which elaborate on instructional foci of writing, these how-to videos model step-by-step instructions for how to actually use the tool itself, helping reduce the student's cognitive load and direct more attention to the writing task. Basic video modeling provides a visual example of how to complete a task that addresses a targeted behavior or skill and involves recording someone besides the learner engaging in the target behavior (Van der Meij, 2017). The option to replay and review a video allows for flexible learning. Teachers can create their own video models using simple, free screencasting software (e.g., Screencast-o-matic). The TBGO how-to videos are indicated with an orange icon of a figure scratching his head and a letter (*a* to *g*; see ***Figure 2*** for How-To Video *a* icon). The videos are approximately 1 to 2.5 minutes long.

Check-ins. Another option on the DDDM maps is for the teacher to conduct a check-in with the student to address a specific area of need. The DDDM map for Writing (see ***Figure 4***) shows the option "Check-in with the student." Check-ins follow principles of effective teaching, including providing corrective feedback, frequently checking for student understanding, and clearly explaining or modeling how to complete a task. Teacher check-ins provide an opportunity for the teacher to hold a brief (5–10 minutes) one-on-one conference with individual students during the TBGO writing process. When a teacher clicks this option on the DDDM map, four instructional options appear that align with the targeted

Figure 6 **Teacher check-in**

Writing		
Identify Your Opinion	The writer has **yet to write** anything to identify an opinion…..or does **not clearly** identify his/her opinion.	1. Teacher asks the student to hover over the I and listen to the audio comment. Direct student to use his/her brainstorm and the Key Words column to write a complete sentence that identifies an opinion. 2. Ask, *"Is there a reason you did not include a complete sentence here?" or "Can you make the opinion clear to the reader by using words from the prompt?"* 3. Provide corrective feedback and explain why the sentence is fragmented and/or unclear to the reader. Facilitate, as needed. 4. Teacher explicitly models (share the finished example provided in the TBGO)an example of a complete sentence that clearly identifies an opinion.

criteria (see ***Figure 6***). The DDDM map directs teachers to use the check-in time for one of the following purposes:

1. Remind students of a particular aspect of the TBGO writing process.
2. Gather more information about the student's understanding.
3. Provide corrective feedback about a student's thinking or misunderstanding.
4. Explicitly model an aspect of the TBGO writing process.

Let's see how Ms. Blackwell thinks through the process of making an instructional decision.

*In the TBGO dashboard, Ms. Blackwell fills out a small table labeled "Instructional Decision." **Figure 2** shows an empty Instructional Decision table on the right side underneath the rubric rows. The white boxes provide space for briefly answering the following: (A) What area of writing needs improvement? (B) What is your rationale? and (C) What will you do? In **Figure 5**, Ms. Blackwell has filled out the Instructional Decision table.*

*The first box in **Figure 5**, (A) "Which area of writing needs improvement?" is prepopulated based on the scores in the TBGO rubric. For example, Sama scored a 2 in "Identify your opinion," so the TBGO has inserted "Writing—Identify Your Opinion" for this box. After the area of writing need is identified, Ms. Blackwell completes the instructional decision box (B), "What is your rationale?" She first analyzes why Sama scored a 2 by looking at the criteria in the rubric cells in conjunction with the student writing. She then recalls that Sama received a 2 because her topic sentence was a complete sentence, but it did not contain a clear response to the persuasive essay prompt. Therefore, Ms. Blackwell writes, "Complete sentence, but did not state her opinion" for instructional decision box (B). Finally, once the area of need and the rationale are determined, she completes box (C), "What will you do?" This is the teacher action item, in which Ms. Blackwell easily chooses an instructional decision using the embedded DDDM maps. The DDDM maps are flowcharts or decision trees that are accessed with links in the Instructional Decision box as seen in **Figure 4**. The DDDM map for writing (**Figure 5**) indicates the relevant instructional options of assigning Content Video 4 (i.e., a 1.5-minute video addressing how to clearly write a topic sentence that states an opinion), How-To Video c, and completing a teacher check-in with the student.*

*Ms. Blackwell observes **Figure 6** when she clicks on "Check-in with the student." She decides to follow Item 1 and will check in after Sama watches Content Video 4. Specifically, she will ask Sama to hover over the I in the TBGO and listen to the audio comment explaining that component of the TBGO. If needed, Ms. Blackwell will also model how to use words from the prompt to revise an example topic sentence.*

Step 5: Adapt the Intervention as Needed

The described process of assessing and making instructional decisions is cyclical. As a student progresses in their writing skills and receives additional instructional support, the intervention can and should be adapted as needed. If an individual's data do not show a positive response to the individualized instruction following multiple opportunities writing with the selected intervention, the teacher should consider a different instructional intervention or adjust specific aspects of the intervention or even the decision rules. For example, a teacher may determine that a student needs to have more frequent opportunities to work with the intervention during class or needs opportunities to work with the intervention outside of class. In addition, teachers should consider if the student is transferring the writing skills observed when writing with the intervention to other writing situations. If these skills are not transferring to other writing situations, further evaluation of the selected intervention is warranted. Also, when using a digital writing intervention, like the TBGO, a teacher may need to consider alternative mobile platforms for the student to best access the intervention or ways to support keyboarding skills. Let's see if Ms. Blackwell needs to adapt the intervention for Sama.

In the teacher dashboard of the TBGO example, Ms. Blackwell makes a data-driven decision in order to personalize and improve Sama's learning and writing performance. Specifically, the rubric identifies that Sama's first sentence in the persuasive writing response does not clearly identify her opinion. Using the DDDM map, Ms. Blackwell creates an instructional plan to address this targeted writing skill. During instruction, Ms. Blackwell notes that Sama is fully engaged with the content video,

and although she verbally expresses an intent to adjust her response during the teacher check-in, clear changes to the first sentence in the TBGO are not observed. In time, Ms. Blackwell determines that Sama needs longer durations of time with the intervention at school so that she can receive direct instruction, ask questions if needed, and fully apply her understanding to her writing in the TBGO during one uninterrupted work session. With this adjustment, Ms. Blackwell observes Sama successfully revise and edit the first sentence of her persuasive paragraph: "I think 10-year-olds cannot stay home alone for safety reasons."

Step 6: Continue to Evaluate Student Progress

Monitoring student progress is a practice that helps teachers to evaluate their own instruction and to determine how students are meeting or not meeting instructional learning objectives. This systematic, cyclical process of evaluating and adjusting one's instruction allows the teacher to provide highly individualized instruction based on student performance. When using interventions, teachers need to continuously and carefully monitor student data to determine the need to intensify or adapt the intervention (see Fuchs et al., 2017). Let's see how Ms. Blackwell continues to evaluate Sama's progress with persuasive writing.

While Sama develops and improves her persuasive writing skills, Ms. Blackwell continues to evaluate Sama's writing and modify instruction as needed to support Sama's writing progress. Ms. Blackwell uses the teacher dashboard and the rubric to support Sama through the revising-and-editing process of the written response. She then provides Sama with a choice of new persuasive writing prompts to respond to. Ms. Blackwell will complete the rubric and use the data from the TBGO to monitor whether Sama is using components of the intervention with fidelity and how she is regulating her own writing progress. The teacher dashboard is especially conducive for organizing student writing, teacher evaluations, and the teacher's instructional decisions. Storing this information allows Ms. Blackwell the option for collaborative review at data meetings so that the team can see Sama's progress over time.

Conclusion

Initiating the instructional decision-making process can seem overwhelming to teachers at first. However, it is imperative that students with learning disabilities receive appropriate and individualized writing instruction to meet their specific academic needs. Teachers can follow these DDDM steps to assess students' essay writing using an analytic rubric, target specific paragraph-writing skills, and make instructional decisions. These steps can be followed when using the existing technology-based intervention described in this article (available for free at https://wego.gmu.edu) or when using other interventions to provide high-quality writing instruction. Utilizing these steps will help teachers like Ms. Blackwell to successfully engage in DDDM.

DECLARATION OF CONFLICTING INTERESTS

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

FUNDING

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: Office of Special Education Programs, Office of Special Education and Rehabilitative Services, Grant ID H327S180004.

ORCID ID

Kelley Regan https://orcid.org/0000-0002-1469-4782

Kelley Regan, *PhD, Professor of Special Education;* **Anya S. Evmenova,** *PhD, Associate Professor of Special Education;* **Amy Hutchison,** *PhD, Associate Professor;* **Jamie Day,** *M.Ed., Graduate Research Assistant;* **Madelyn Stephens,** *M.Ed., Graduate Research Assistant;* **Courtney Verbiest,** *M.Ed., Graduate Research Assistant; and* **Boris Gafurov,** *PhD, Research Assistant Professor; Division of Special Education and disAbility Research, George Mason University, Fairfax, VA.*

Address correspondence concerning this article to Kelley Regan, Division of Special Education and disAbility Research, George Mason University, 4400 University Drive, MS 1F2, Finley Building, Fairfax, VA 22030 (email: kregan@gmu.edu).

REFERENCES

Allen, A. A., Poch, A. L., & Lembke, E. S. (2018). An exploration of alternative scoring methods using curriculum-based measurement in early writing. *Learning Disability Quarterly*, *41*(2), 85–99. https://doi.org/10.1177/0731948717725490

Andrade, H. G. (2000). Using rubrics to promote thinking and learning. *Educational Leadership*, *57*(5), 13–18.

Bang, H. J. (2013). Reliability of national writing project's analytic writing continuum assessment system. *The Journal of Writing Assessment*, *6*(1). http://www.journalofwritingassessment.org/article.php?article=67

Bradford, K. L., Newland, A. C., Rule, A. C., & Montgomery, S. E. (2016). Rubrics as a tool in writing instruction: Effects on the opinion essays of first and second graders. *Early Childhood Education Journal*, *44*, 463–472. https://doi.org/10.1007/s10643-015-0727-0

Brookhart, S. M. (2013). *How to create and use rubrics for formative assessment and grading*. Association of Supervision and Curriculum Development. http://ebookcentral.proquest.com

Chambers, B., Slavin, R. E., Madden, N. A., Abrami, P. C., Tucker, B. J., Cheung, A., & Gifford, R. (2008). Technology infusion in success for all: Reading outcomes for first graders. *Elementary School Journal*, *109*(1), 1–15. https://doi.org/10.1086/592364

Coe, M., Hanita, M., Nishioka, V., & Smiley, R. (2011). *An investigation of the impact of the 6+1 Trait writing model on Grade 5 student writing achievement* (NCEE 2012–4010). National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education.

De Bruyckere, P., Kirschner, P. A., & Hulshof, C. D. (2016). Technology in education: What teachers should know. *American Educator*, *40*(1), 12–18.

Dombek, J. L., & Al Otaiba, S. (2016). Curriculum-based measurement for beginning writers (K–2). *Intervention in School and Clinic*, *51*(5), 276–283. https://doi.org/10.1177/1053451215606691

Dunn, K. E., Airola, D. T., Lo, W. J., & Garrison, M. (2013). What teachers think about what they can do with data: Development and validation of the data driven decision-making efficacy and anxiety inventory. *Contemporary Educational Psychology*, *38*(1), 87–98. https://doi.org/10.1016/j.cedpsych.2012.11.002

Evmenova, A. S., & Regan, K. (2019). Supporting the writing process with technology for students with disabilities. *Intervention in School and Clinic*. Advance online publication. https://doi.org/10.1177/1053451219837636

Evmenova, A. S., Regan, K., Boykin, A., Good, K., Hughes, M., MacVittie, N., Sacco, D., Ahn, S. Y., & Chirinos, D. (2016). Emphasizing planning for essay writing with a computer-based graphic organizer. *Exceptional Children*, *82*(2), 144–169. https://doi.org/10.1177/0014402915585483

Evmenova, A. S., Regan, K., & Hutchison, A. (2020). AT for writing: Technology-based graphic organizers with embedded supports. *TEACHING Exceptional Children*, *52*(4), 266–269. https://doi.org/10.1177/0040059920907571

Fuchs, L. S., Fuchs, D., & Malone, A. S. (2017). The taxonomy of intervention intensity. *Teaching Exceptional Children*, *50*(1), 35–43.

Graham, S., & Perin, D. (2007). *Writing next: Effective strategies to improve writing of adolescents in middle and high schools. A*

report to Carnegie Corporation of New York. Alliance for Excellent Education.
Harmey, S., D'Agostino, J., & Rodgers, E. (2019). Developing an observational rubric of writing: Preliminary reliability and validity evidence. *Journal of Early Childhood Literacy*, *19*(3), 316–348. https://doi.org/10.1177/1468798417724862
Heldsinger, S. A., & Humphry, S. M. (2013). Using calibrated exemplars in the teacher-assessment of writing: An empirical study. *Educational Research*, *55*(3), 219–235. https://doi.org/10.1080/00131881.2013.825159
Hodges, T. S., Wright, K. L., Wind, S. A., Matthews, S. D., Zimmer, W. K., & McTigue, E. (2019). Developing and examining validity evidence for the Writing Rubric to Inform Teacher Educators (WRITE). *Assessing Writing*, *40*, 1–13. https://doi.org/10.1016/j.asw.2019.03.001
IRIS Center. (2014). *Evidence-based practices (Part 1): Identifying and selecting a practice or program*. https://iris.peabody.vanderbilt.edu/module/ebp_01/
Jung, P. G., McMaster, K. L., Kunkel, A. K., Shin, J., & Stecker, P. M. (2018). Effects of data-based individualization for students with intensive learning needs: A meta-analysis. *Learning Disabilities Research & Practice*, *33*(3), 144–155.
Lembke, E. S., McMaster, K. L., Smith, A. R., Allen, A., Brandes, D., & Wagner, K. (2018). Professional development for data-based instruction in early writing: Tools, learning, and collaborative support. *Teacher Education and Special Education*, *41*(2), 106–120. https://doi.org/10.1177/0888406417730112
Mandinach, E. B. (2012). A perfect time for data use: Using data-driven decision making to inform practice. *Educational Psychologist*, *47*(2), 71–85.
Mandinach, E. B., & Gummer, E. S. (2016). What does it mean for teachers to be data literate: Laying out the skills, knowledge, and dispositions. *Teaching and Teacher Education*, *60*, 452–457. https://doi.org/10.1016/j.tate.2016.07.011
McMaster, K. L., & Espin, C. (2007). Technical features of curriculum-based measurement in writing. *The Journal of Special Education*, *41*, 68–84. https://doi.org/10.1177/00224669070410020301
National Writing Project. (2010). *The Analytic Writing Continuum: A comprehensive writing assessment system*. National Writing Project.
Northwest Regional Educational Laboratory. (2007). *6+1 Trait writing*. http://www.thetraits.org/about
Panadero, E., & Jonsson, A. (2020). A critical review of the arguments against the use of rubrics. *Educational Research Review*, *30*, 100329. https://doi.org/10.1016/j.edurev.2020.100329
Park, V., & Datnow, A. (2017). Ability grouping and differentiated instruction in an era of data-driven decision making. *American Journal of Education*, *123*, 281–306.
Reeves, T. D., & Chiang, J-L. (2018). Online interventions to promote teacher data-driven decision making: Optimizing design to maximize impact. *Studies in Educational Evaluation*, *59*, 256–269. https://doi.org/10.1016/j.stueduc.2018.09.006
Regan, K., Evmenova, A. S., Boykin, A., Sacco, D., Good, K., Ahn, S. Y., MacVittie, N., & Hughes, M. D. (2016). Supporting struggling writers with class-wide teacher implementation of a computer-based graphic organizer. *Reading and Writing Quarterly*, *33*(5), 428–448. https://doi.org/10.1080/10573569.2016.1221781
Regan, K., Evmenova, A., Good, K., Leggett, A., Ahn, S. Y., & Mastropieri, M. (2017). Persuasive writing with mobile-based graphic organizers in inclusive classrooms across the curriculum. *Journal of Special Education Technology*, *33*(1), 3–14. https://doi.org/10.1177/0162643417727292
Regan, K., Evmenova, A. S., MacVittie, N. P., Leggett, A., Ives, S. T., Schwartzer, J., Mastropieri, M., & Rybicki-Newman, M. P. (2019). A case of early adopters of technology in a social studies classroom. *Contemporary Issues in Technology and Teacher Education*, *19*(3). https://www.citejournal.org/publication/volume-19/issue-3-19/
Romeo, L. (2017). Informal writing assessment linked to instruction: A continuous process for teachers, students, and parents. *Reading and Writing Quarterly*, *24*(1), 25–51. https://doi.org/10.1080/10573560701753070
Schirmer, B. R., & Bailey, J. (2000). Writing assessment rubric: An instructional approach with struggling writers. *TEACHING Exceptional Children*, *33*(1), 52–58.
Swain, S. S., & Friedrich, L. (2018). A common language and criteria to boost students' writing. *Educational Leadership*, *75*(7), 66–71.
Van der Meij, H. (2017). Review in instructional video. *Computers & Education*, *114*, 164–174. https://doi.org/10.1016/j.compedu.2017.07.002

TEACHING Exceptional Children, Vol. 54, No. 3, pp. 202–212.