RTI Classroom Teacher Toolkit

Removing the Blindfold: How to Use Classroom Data to Set Goals and Monitor Student Progress: A Toolkit for Mental Health Professionals

Jim Wright, Presenter

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Putnam/Northern Westchester BOCES
Yorktown Heights, NY

Email: jimw13159@gmail.com
Workshop Materials: http://www.interventioncentral.org/data
Monitoring Student Progress on Classroom Interventions: Five Big Ideas

Teachers collect and interpret multiple streams of classroom data continuously to make ongoing judgments about whether groups or individual learners are understanding instructional content, making adequate progress in coursework, and behaving appropriately. However, for students on individual academic or behavioral intervention plans, the process that teachers follow to set up a progress-monitoring plan is more structured. This increased structure is warranted because the stakes are higher: the teacher is both accountable for that intervention and wants to gather clear, trustworthy information in as short a time as possible to judge whether it is effective. After all, no instructor wants to spend months delivering an intervention that does not work!

While progress-monitoring is more methodical when applied to individual classroom interventions, the process can still be manageable. Here are five ‘big ideas’ about monitoring student progress that can assist teachers in collecting more useful data efficiently and making better decisions about students’ response to classroom interventions.

1. **Define the student problem clearly.** Before the teacher can select a method of data collection to monitor student progress, that instructor must first define the academic or behavioral problem clearly (Christ, 2008). Clear definitions of the presenting concern are called ‘problem identification [ID] statements’.

   Problem ID statements can often be improved by making them more specific and, when appropriate, by adding information about frequency, intensity, or other objective data to clarify the severity of the problem. For example, an instructor may initially come up with this problem ID statement, ‘Angela is disruptive in class.’ This vague statement can be improved with detail, e.g., ‘Angela argues and refuses to comply when given a teacher request.’

   Similarly, a teacher’s concern that ‘Sam never turns in homework’ can be improved if she consults her gradebook for information about how frequently the student submits work, e.g., ‘Sam turns in homework only about 25 percent of the time.’

2. **Take full advantage of practical progress-monitoring tools available in the classroom.** There are a range of data-collection methods that teachers can use to track student progress on academic or behavioral interventions, such as grades, rubrics, student interviews, behavior report cards, and checklists. Most of these measures are teacher-made and have the advantage of measuring the student’s actual observed behavior or academic performance (Howell, Hosp & Kurns, 2008).

   A concern sometimes raised about such ‘informal’ measures is that they appear to lack the rigor of norm-referenced assessments—such as curriculum-based measurement or commercial tests—that schools use to make high-stakes judgments about the effectiveness of more intensive RTI interventions and special-education programming. However, the stakes of classroom (Tier 1) interventions are typically lower than these more advanced interventions because the teacher is proactively addressing emerging concerns before they escalate. The reduced stakes mean that the measures used to track success on these general-education interventions can also be less rigorous (Hosp, 2008).

3. **Know the student’s starting point.** When preparing to monitor a student on intervention, the teacher typically first collects ‘baseline’ data. In this step, the instructor assesses the student’s academic or behavioral performance on one or more occasions before the intervention starts—and uses this preliminary data to estimate
that student’s starting point or current level of performance (Hixson, Christ & Bruni, 2014). Of course, baseline data is collected employing the same method of formative assessment that will be used to track progress during the intervention phase. Baseline data is helpful in calculating an intervention goal (see below). Of equal importance, baseline information can be used as a point of comparison throughout the intervention period to judge whether that student has made progress.

4. **Set an intervention goal.** The teacher has a last task to complete before launching an intervention and monitoring progress: establish an outcome goal for the student (Hixson, Christ & Bruni, 2014). To compute this outcome goal, the instructor decides how many instructional weeks the intervention will last and calculates a ‘realistic but ambitious’ performance goal that the student is expected to meet or exceed by the conclusion of the intervention period. The importance of the intervention goal, of course, is that it allows the teacher a simple, unambiguous standard against which to judge the success of the intervention. Without such a goal to work toward, the instructor is flying blind, unable to ascertain whether the student's current intervention performance falls short of, meets, or exceeds expectations.

5. **Reduce the ‘noise’ in the data.** A central truth about real-world student performance data of any kind is that each data-point contains both real information and an element of error (Hosp, 2008). Error in measurement is a natural element of data collection and can arise from many sources, including fluctuations in student mood and motivation; variability in educators’ approach to data collection, scoring, and interpretation; and even the presence of environmental distractions that interfere with focus and concentration. Error in data collection is ever-present. Teachers, however, can take action to minimize the ‘noise’, or ‘error’, and to maximize the ‘signal’, or ‘true’ information, that data contains—for example, by developing standardized procedures for collecting and evaluating data of any kind and consistently following those methods or ensuring that the student is focused and sufficiently motivated before participating in an assessment session.

**References**


How To: Define Academic Problems: The First Step in Effective Intervention Planning

Students who struggle with academic deficits do not do so in isolation. Their difficulties are played out in the larger context of the school environment and curriculum—and represent a ‘mismatch’ between the characteristics of the student and the instructional demands of the classroom (Foorman & Torgesen, 2001).

It may surprise educators to learn that the problem-identification step is the most critical for matching the student to an effective intervention (Bergan, 1995). Problem identification statements should be defined in clear and specific terms sufficient to pass ‘the stranger test’ (Howell, Hosp, & Kurns, 2008). That is, the student problem can be judged as adequately defined if a person with no background knowledge of the case and equipped only with the problem-identification statement can observe the student in the academic setting and know with confidence when the problem behavior is displayed and when it is not.

Here are recommendations for increasing teacher capacity to describe student academic problems in specific terms, and generate a hypothesis about why the problem is occurring.

1. **Describe the academic problem in specific, skill-based terms with a meaningful instructional context** (Batsche et al., 2008; Upah, 2008). Write a clear, brief description of the academic skill or performance deficit that focuses on a specific skill or performance area. Include information about the conditions under which the academic problem is observed and typical or expected level of performance.

   - **Conditions.** Describe the environmental conditions or task demands in place when the academic problem is observed.
   - **Problem Description.** Describe the actual observable academic behavior with which the student has difficulty. If available, include specifics about student performance, such as rate of work, accuracy, or other relevant quantitative information.
   - **Typical or Expected Level of Performance.** Provide a typical or expected performance criterion for this skill or behavior. Typical or expected academic performance can be calculated using a variety of sources, such as benchmark norms, local (classroom) norms, or expert opinion.

<table>
<thead>
<tr>
<th>Environmental Conditions or Task Demands</th>
<th>Problem Description</th>
<th>Typical or Expected Level of Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>When shown flashcards with mixed-case letters for 3 seconds</td>
<td>Annika can name 38 of 52 correctly</td>
<td>while most peers in her class can name all letters correctly.</td>
</tr>
<tr>
<td>When asked to blend / segment onsets and rimes of single-syllable spoken words</td>
<td>Thomas (grade 1) is inconsistent in this skill</td>
<td>while this is a Kindergarten ELA/Reading standard.</td>
</tr>
<tr>
<td>When shown CVC words from all vowel families via flashcards</td>
<td>Terrance requires adult prompting, hints, and occasional direction to sound out and blend the words</td>
<td>while classmates perform the task with prompting only.</td>
</tr>
<tr>
<td>When reading aloud from a 1-minute 4th-grade passage</td>
<td>Benjamin reads an average of 45 words</td>
<td>while the fall norm (20th percentile) at Grade 4 is 68 words per minute.</td>
</tr>
</tbody>
</table>
When completing sets of 5 short-answer questions based on assigned readings… Neda scores an average of 40% (2 of 5 correct) while classmates score an average of 80%

When directed to match terms and definitions for 20 social-studies terms… Lucy can correctly match 10 items while this entry-level vocabulary is a prerequisite for the course.

2. **Select a hypothesis to explain the academic skill or performance problem.** The hypothesis states the assumed reason(s) or cause(s) for the student’s academic problems. Once selected, the hypothesis acts as a compass needle, pointing toward interventions that most logically address the student academic problems. Listed below are common reasons for academic problems. Note that occasionally more than one hypothesis may apply to a particular student (e.g., a student may demonstrate a skill deficit as well as a pattern of escape/avoidance).

<table>
<thead>
<tr>
<th>Academic Problems: Possible Hypotheses &amp; Recommendations</th>
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<tbody>
<tr>
<td>Hypothesis</td>
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<tr>
<td>---</td>
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<tr>
<td><strong>Skill Deficit.</strong> The student has not yet acquired the skill(s).</td>
</tr>
<tr>
<td><strong>Fluency Deficit.</strong> The student has acquired the skill(s) but is not yet proficient.</td>
</tr>
<tr>
<td><strong>Retention Deficit.</strong> The student can acquire the skill(s) but has difficulty retaining it over an extended period.</td>
</tr>
</tbody>
</table>
| **Endurance Deficit.** The student can perform the academic task(s), but only for brief periods. | • Provide scaffolding supports to help the student to perform the academic task.  
  • In structuring lessons or independent work, gradually lengthen the period of time that the student spends in skills practice or use.  
  • Have the student self-monitor active engagement in skill-building activities--setting daily, increasingly ambitious work goals and then tracking whether he or she successfully reaches those goals. |
| **Generalization Deficit.** The student possesses the skill(s) but fails to use across appropriate situations or settings. | • Enlist adults to prompt and remind the student to use the target skills when needed.  
  • Train the student to identify relevant characteristics of situations or settings when the skill should be used—and to self-monitor skill use.  
  • Provide incentives (e.g., praise, rewards) for the student to use the skill in the appropriate settings. |
| **Escape/Avoidance.** The student seeks to escape or avoid the academic task. NOTE: This | • Adjust the work to the student’s ability level.  
  • Use scaffolding and accommodation strategies to make the academic work more manageable, e.g., breaking larger tasks into smaller increments (“chunking”), allowing the student to take brief breaks during work sessions, etc. |
category includes “learned helplessness”.

References


Classroom Data Tools: What Are They and What Can They Measure?

Teachers have a variety of tools that they can access to collect behavioral or academic information and monitor classroom interventions. This 'look-up' chart provides a review of the most common data sources and what they can measure:

<table>
<thead>
<tr>
<th>Data Tool</th>
<th>What It Is</th>
<th>What It Can Measure</th>
</tr>
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<tbody>
<tr>
<td>Archival Data</td>
<td>Existing data routinely collected by schools that provides useful ongoing information about the student’s academic or behavioral performance.</td>
<td>• Attendance&lt;br&gt;• Office disciplinary referrals&lt;br&gt;• Other aspects of behavior or academic performance captured in the school database</td>
</tr>
<tr>
<td>Behavior Report Cards</td>
<td>A teacher-created rating scale that measures student classroom behaviors. A behavior report card contains 3-4 rating items describing goal behaviors. Each item includes an appropriate rating scale (e.g., Poor-Fair-Good). At the end of an observation period, the rater fills out the report card as a summary snapshot of the student's behavior.</td>
<td>• General behaviors (e.g., complies with teacher requests; waits to be called on before responding)&lt;br&gt;• Academic ‘enabling’ behaviors (e.g., has all necessary work materials; writes down homework assignment correctly and completely, etc.)</td>
</tr>
<tr>
<td>Checklists</td>
<td>The dividing of a larger behavioral task or sequence into constituent steps, sub-skills, or components. Each checklist element is defined in a manner that allows the observer to make a clear judgment (e.g., YES/NO, COMPLETED/NOT COMPLETED) about whether the student is displaying it.</td>
<td>• Step-by-step cognitive strategies&lt;br&gt;• Behavioral routines&lt;br&gt;• Generalization: Target behavior carried out across settings</td>
</tr>
<tr>
<td>Cumulative Mastery Records</td>
<td>A cumulative record of the student’s acquisition/mastery of a defined collection of academic items such as multiplication math facts. This record is updated after every intervention session.</td>
<td>• Any discrete collection of academic items to be mastered: e.g., vocabulary, math facts, spelling words, letter or number names</td>
</tr>
<tr>
<td>Curriculum-Based Measures/Assessment</td>
<td>A series of brief measures of basic academic skills given under timed conditions and scored using standardized procedures. CBM/CBA measures often include research-derived benchmark norms to assist in evaluating the student’s performance.</td>
<td>• Speed and accuracy in basic academic skills: e.g., letter naming, number naming, number sense, vocabulary, oral reading fluency, reading comprehension (maze), production of writing, math fact computation</td>
</tr>
<tr>
<td>Grades</td>
<td>Represent in letter or number form the teacher’s formal, summary evaluation of the student’s academic performance on an assignment, quiz, test, or longer span of evaluation.</td>
<td>• Homework grades&lt;br&gt;• Test grades&lt;br&gt;• Quarterly report card grades</td>
</tr>
<tr>
<td>Interviews</td>
<td>Guided by prompts or questions, the student periodically provides feedback about</td>
<td>• Student routines outside of class (e.g., use of study hall time, homework regimen)</td>
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<thead>
<tr>
<th><strong>academic performance, conduct, or other relevant intervention targets.</strong></th>
<th><strong>Collecting covert information accessible only to the student (e.g., a learner’s demonstration of ability to implement essential steps of a cognitive strategy)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Interviews are most effective when brief and consistent in format, with structured questions designed to elicit objective student responses. The interviewer can also reference specific instruments to focus questions: e.g., checklist, rubric, rating scale.</td>
<td></td>
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<tr>
<td><strong>Logs</strong></td>
<td><strong>Homework completion</strong></td>
</tr>
<tr>
<td>Informal adult or student entries that track the frequency (and perhaps additional details) of relevant academic performance and/or behaviors.</td>
<td><strong>Academic engagement</strong></td>
</tr>
<tr>
<td><strong>Observation</strong></td>
<td><strong>Academic engagement</strong></td>
</tr>
<tr>
<td>Data on behavior or academic performance collected during direct observation of the student. The objectivity and consistency of data is often improved if the observer uses instruments to structure the observation: e.g., checklist, rubric, rating scale.</td>
<td><strong>Academic engagement</strong></td>
</tr>
<tr>
<td><strong>Rubrics</strong></td>
<td><strong>Any complex, multi-dimensional task: e.g., participation in a discussion; writing a research paper; preparing and presenting a PowerPoint; completing and documenting a science lab project, etc.</strong></td>
</tr>
<tr>
<td>An instrument that allows an evaluator to rate the quality of a student’s performance on a complex, multi-dimensional task. A rubric typically includes a rating scale to evaluate significant aspects of student performance; each point on the scale is paired with a verbal description, or exemplar, defining what performance at that level looks like.</td>
<td><strong>Any complex, multi-dimensional task: e.g., participation in a discussion; writing a research paper; preparing and presenting a PowerPoint; completing and documenting a science lab project, etc.</strong></td>
</tr>
<tr>
<td><strong>Self-Monitoring</strong></td>
<td><strong>Collecting data from settings outside of the classroom (e.g., self-monitoring homework routines)</strong></td>
</tr>
<tr>
<td>The student collects information about his or her own performance. The objectivity and consistency of data collection increases if the self-monitoring student uses a structured instrument (e.g., behavior report card, rubric, checklist, etc.).</td>
<td><strong>Collecting data from settings outside of the classroom (e.g., self-monitoring homework routines)</strong></td>
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<tr>
<td><strong>Work Products</strong></td>
<td><strong>Work completion</strong></td>
</tr>
<tr>
<td>Student work that reflects performance on a series of similar in-class or homework assignments (e.g., successive writing assignments or ongoing math homework). A work product is selected because it can reflect growth in the intervention target skill(s). The element(s) of the work product being tracked can be objectively measures and converted to numeric data (e.g., percentage of problems completed).</td>
<td><strong>Work completion</strong></td>
</tr>
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Progress-Monitoring Questions: How Do I Measure...?

Before a teacher can select a method to monitor a student intervention, that instructor must first decide what assessment question(s) to answer. This ‘look-up’ chart lists the most common classroom assessment questions and specific assessments that can answer those questions.

<table>
<thead>
<tr>
<th>Assessment Questions: How do I measure if the student...</th>
<th>Suggested Methods of Progress-Monitoring</th>
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<tbody>
<tr>
<td>• is becoming more accurate in an academic skill (goal: accuracy only)?</td>
<td>• Cumulative Mastery Record: This approach is suitable when the student is mastering a fixed set of items (e.g., biology vocabulary; multiplication math facts 0-12).</td>
</tr>
<tr>
<td></td>
<td>• Observation/Log: The teacher observes and records instances of successful student performance.</td>
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<tr>
<td></td>
<td>• Work product: The teacher examines student work and records the number/percentage of items correct.</td>
</tr>
<tr>
<td>• is developing fluency in an academic skill (goal: accuracy plus speed)?</td>
<td>• Curriculum-based measures: CBMs are a good choice for rote basic skills such as reading fluency, or math fact fluency.</td>
</tr>
<tr>
<td></td>
<td>• Other timed measures: Teachers can create their own timed proficiency assessments--that assess work efficiency by measuring accurate responding within pre-set time limits (e.g., running record).</td>
</tr>
<tr>
<td>• is increasing comprehension of independent reading?</td>
<td>• Grades: Assignments or quizzes are structured to assess student comprehension of assigned readings and collected with sufficient frequency to capture evidence of short-term improvements.</td>
</tr>
<tr>
<td></td>
<td>• Work product: Short-answer questions. The teacher prepares questions suitable for assessing student comprehension of the reading (e.g., mix of factual and inferential questions). Question sets can be assigned as homework or included in quizzes.</td>
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<tr>
<td></td>
<td>• Work product: Written retelling. The student is assigned to summarize important points of assigned readings ('written retellings'); the teacher tabulates the number/percentage of ‘key ideas’ or concepts included in the retelling.</td>
</tr>
<tr>
<td>• is mastering a multi-step cognitive strategy or behavior routine?</td>
<td>• Checklist: The teacher or student uses a checklist to verify steps of the strategy successfully completed.</td>
</tr>
<tr>
<td></td>
<td>• Work product: The student is directed to show work on assignment, e.g., perhaps assisted by visual organizers or other aids highlighting strategy steps. The teacher reviews completed work for evidence of strategy use.</td>
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<tr>
<td></td>
<td>• Observation/Interview: An adult observes the student during the activity to record (perhaps with the help of a checklist or behavior report card) those steps successfully carried out. The observer may also ask the student to describe the steps being followed.</td>
</tr>
<tr>
<td>• is turning in homework or in-class assignments with greater frequency?</td>
<td>• Log: The teacher keeps a record of homework turned in.</td>
</tr>
<tr>
<td>• Self-Monitoring: The student completes a daily classwork-readiness checklist that includes an item on whether homework was submitted.</td>
<td>• produces work of higher quality?</td>
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</tr>
</tbody>
</table>
| • Rubric: The teacher or student rates the quality of the work.  
• Checklist: The teacher or student rates whether each element or step in the assignment is complete.  
• Work product: The teacher defines what element(s) are missing or substandard in student work, monitor their inclusion and/or quality over time. | • is increasing on-task behavior and academic engagement? |
| • Behavior report card: Rating items are specific to on-task behavior and work engagement.  
• Work product: Monitor amount/quality/accuracy of completed student in-class work. Improvements in work production correlate with increased on-task behavior. | • is better able to organize and implement steps necessary to complete an in-class or homework assignment? |
| • Checklist: Recommended if assignment steps can be rated simply COMPLETED/NOT COMPLETED.  
• Rubric: Recommended if assignment steps are complex and rated along a quality continuum. | • transfers an existing skill or strategy to new settings or situations (goal: generalization)? |
| • Observer/Checklist. The observer notes whether the student follows the steps of the checklist in the appropriate situations or settings.  
• Interview/Checklist: Student is asked structured set of questions about successful use of the target skill/strategy in the target setting(s). | • improves compliance with behavioral expectations? |
| • Behavior report card: Rating items track compliance.  
• Logs: The teacher keeps a log recording incidents of misbehavior, etc.  
• Archival records: Office Disciplinary Referrals are tracked for incidents of non-compliance. | • improves overall academic standing in the course because of academic interventions? |
| • Grades. Grades are designed to reflect general improvements in academic performance. Ideally, grading opportunities are frequent and the grades used to evaluate academic improvement are a ‘pure’ measure of academic attainment. |
Setting Outcome Goals for Academic Interventions: Benchmarks, Local Norms, and Criterion-Referenced Goals

When planning any intervention, an essential step is to calculate an outcome goal—that is, the goal used ultimately to judge whether the intervention is successful. An outcome goal typically represents improvement on one of these 2 targets:

- Observable student behavior (e.g., call outs, engagement in independent seatwork, compliance with teacher requests; number of words read correctly per minute in a grade-level text).
- Student performance on work products (e.g., number of correctly completed math problems, percentage of homework turned in, grade on a mid-term exam).

The outcome goal represents the minimum improvement in student performance or work production that indicates that a classroom intervention is successful. So, the outcome goal is selected before the intervention begins. There are 3 main options for setting an outcome goal. The goal can be:

1. calculated using benchmark data with research norms.
2. developed based on local/classroom norms
3. based on a teacher-selected standard (criterion-referenced)

Here is a general description of each of these methods for establishing outcome goals:

1. **Benchmark data with research norms.** For some basic academic skills, teachers can access published norms by grade level that can be used to set intervention goals. Benchmark norms are a type of norm-referenced assessment, as they allow the instructor to rank a particular student's performance (e.g., 50th percentile; 10th percentile) relative to that of grade-level peers. When available, benchmark norms are usually recommended as the best guide to use in goal-setting because they are derived from research. (A number of commercial screening and progress-monitoring tools for academic skills come with their own benchmark norms, including AIMSweb, FASTBridge, EasyCBM, and iSteep.)

As one illustration of a benchmarked skill, oral reading fluency (ORF) can be precisely measured using curriculum-based measurement (CBM). On ORF-CBM, the student reads aloud for 1 minute from a controlled passage and receives a score for number of words read correctly. Consulting benchmark norms (Hasbrouck & Tindal, 2017), for example, a 4th-grade teacher discovers that a 4th-grade student in the middle of the school year performing at the 25th percentile reads 95 words per minute. (See Table 1.) The instructor can use this information as a starting point to calculate an intervention goal for a student in his classroom with reading-fluency delays.

<table>
<thead>
<tr>
<th>Grade 4: Oral Reading Fluency</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Percentile</strong></td>
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<tr>
<td>90</td>
</tr>
<tr>
<td>75</td>
</tr>
<tr>
<td>50</td>
</tr>
<tr>
<td>25</td>
</tr>
<tr>
<td>10</td>
</tr>
</tbody>
</table>

Source: Hasbrouck, J. & Tindal, G. (2017). An update to compiled...
2. **Local/classroom norms: Tie goals to typical classroom performance.** For many classroom academic skills or behaviors (e.g., percentage of homework assignments turned in), no benchmark norms exist. Yet the teacher may wish to discover how ‘typical’ students in a class perform in these skills or behaviors—and use this information about average proficiency to set outcome goals for particular struggling students.

In this situation, that instructor may decide to sample the entire class or a representative sub-group to obtain ‘local norms’ as an estimate of average performance. Those local norms are then used to calculate an outcome goal for any student targeted for an intervention (Christ, 2008). (NOTE: When analyzing local norms, it is generally recommended that the *median* score be used to represent a class-wide or group average, rather than the *arithmetic mean*—as median values are less likely to be distorted by extreme high or low values in the data-set.)

An advantage of local norms is that they are anchored to current, real-life levels of classroom performance. The 2 most frequent types of local norms that teachers collect are class-wide and sub-group norms. Here are examples of each:

- **Class-wide norms: Math-facts.** An instructor in a 3rd-grade classroom administers a timed (2-minute) math worksheet with basic multiplication facts to the entire class. The teacher counts up the number of correct digits on each student's worksheet and then reviews the data from all worksheets to find that the average (median) student writes 62 correct digits. The teacher then identifies one student in the class, Sally, whose multiplication-fact fluency is only 22 correct digits. The teacher can use the class-wide norm of 62 correct digits as a starting point to calculate an intervention goal intended eventually to bring that student’s multiplication-fact fluency up to the classroom average.

- **Class-wide norms: Homework completion.** A teacher routinely logs all submitted homework for his class into a spreadsheet that automatically calculates percentage of assignments turned in for each student. The instructor’s records show that the class-wide average for submitted homework is 90 percent. He has a target student whose homework completion is only 50 percent. So, the class-wide average (local norm) is useful in setting an ambitious but realistic goal for a homework intervention plan.

- **Sub-group norms: Writing fluency.** Teachers can also sample a sub-group of the class to develop local norms. While sub-group norms are less rigorous than class-wide norms, they are also easier to collect and calculate. For example, an instructor collects a writing assignment from a sample of 5 ‘typical’ students in her class that she judges to have grade-appropriate writing skills and counts up the number of words in each composition. She ranks the students’ results from low to high (see Table 2).

<table>
<thead>
<tr>
<th>Table 2: Local Norm Group Example: Writing Assignment: Word Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lucy</td>
</tr>
<tr>
<td>103</td>
</tr>
</tbody>
</table>

The teacher has a student, Russell, who produces very short compositions (i.e., writing only 42 words on the current writing assignment). The instructor can use the local norms to set a realistic writing-fluency goal for Russell. For example, the teacher may select a word-count goal for Russell to produce 103 words on
future writing assignments, as that would have him writing within the lower range of ‘typical’ writing fluency represented in these local norms.

3. **Teacher-selected standard (criterion-referenced goals).** In many cases, an instructor does not care to know how a student ranks among peers in a skill—the goal is simply that the student master that skill and advance to the next challenge. This type of goal is called ‘criterion-referenced’, as it is framed as the student’s attainment or failure to reach a pre-selected criterion for performance (Criterion-referenced test, 2014). The teacher chooses the performance goal and the criteria for judging success. Here the student’s performance is compared solely to a teacher-selected standard, with no element of peer comparison.

Here are examples of teacher-selected (criterion-referenced) goals:

- **Common-Core Learning Standard.** Criterion-referenced goals are sometimes imposed by others. For example, a Common Core State Standard for Mathematics states that, by the end of grade 3, the student will “know from memory all products of two one-digit numbers.” (CCSS Math; p. 23). A teacher selecting this standard as the objective for a math intervention will select the goal of 100% mastery of all one-digit by one-digit multiplication facts. That instructor does not care to assess how the target student performs relative to peers, only whether the learner attains the minimum expectations of the standard.

- **Course pre-requisite skill.** A teacher may select as a goal a skill that is a pre-requisite for success in a particular course. For example, a science teacher compiles a list of 20 essential vocabulary terms that students must know as a prerequisite for her biology course. When a student in the course is found to lack an understanding of 13 of the 20 terms, the criterion-referenced intervention goal is for the student to master all of the vocabulary terms.

- **Cognitive strategy.** If the student is expected to master a multi-step cognitive strategy (e.g., to solve a math word problem), the teacher may set as a criterion-referenced goal that the student will use all steps of the strategy successfully during independent work. To assess attainment of this goal, the teacher could conduct an observation, directing the student to narrate aloud steps of his or her problem-solving while completing several word problems. Or the instructor may instruct the student to label each problem-solving step and show all work before turning in the worksheet. Whether through observation or review of completed work, the instructor can discern whether the student meets the criterion of successful strategy use.

**References**


Classroom Data Collection: Additional Resources
How To: Create a Written Record of Classroom Interventions

When general-education students begin to struggle with academic or behavioral issues, the classroom teacher will typically select and implement one or more evidence-based intervention strategies to assist those students. But a strong intervention plan needs more than just well-chosen interventions. It also requires 4 additional components (Witt, VanDerHeyden, & Gilbertson, 2004): (1) student concerns should be clearly and specifically defined; (2) one or more methods of formative assessment should be used to track the effectiveness of the intervention; (3) baseline student data should be collected prior to the intervention; and (4) a goal for student improvement should be calculated before the start of the intervention to judge whether that intervention is ultimately successful. If a single one of these essential 4 components is missing, the intervention is to be judged as fatally flawed (Witt, VanDerHeyden, & Gilbertson, 2004) and as not meeting minimum Response to Intervention standards.

Teachers need a standard format to use in documenting their classroom intervention plans. The Classroom Intervention Planning Sheet that appears later in this article is designed to include all of the essential documentation elements of an effective intervention plan. The form includes space to document:

- **Case information.** In this first section of the form, the teacher notes general information, such as the name of the target student, the adult(s) responsible for carrying out the intervention, the date the intervention plan is being created, the expected start and end dates for the intervention plan, and the total number of instructional weeks that the intervention will be in place. Most importantly, this section includes a description of the student problem; research shows that the most significant step in selecting an effective classroom intervention is to correctly identify the target student concern(s) in clear, specific, measureable terms (Bergan, 1995).

- **Intervention.** The teacher describes the evidence-based intervention(s) that will be used to address the identified student concern(s). As a shortcut, the instructor can simply write the intervention name in this section and attach a more detailed intervention script/description to the intervention plan.

- **Materials.** The teacher lists any materials (e.g., flashcards, wordlists, worksheets) or other resources (e.g., Internet-connected computer) necessary for the intervention.

- **Training.** If adults and/or the target student require any training prior to the intervention, the teacher records those training needs in this section of the form.

- **Progress-Monitoring.** The teacher selects a method to monitor student progress during the intervention. For the method selected, the instructor records what type of data is to be used, collects and enters student baseline (starting-point) information, calculates an intervention outcome goal, and notes how frequently he or she plans to monitor the intervention.

A completed example of the Classroom Intervention Planning Sheet that includes a math computation intervention can be found later in this article.

While a simple intervention documentation form is a helpful planning tool, schools should remember that teachers will need other resources and types of assistance as well to be successful in selecting and using classroom interventions. For example, teachers should have access to an ‘intervention menu’ that contains evidence-based strategies to address the most common academic and behavioral concerns and should be able to get coaching support as they learn how to implement new classroom intervention ideas.

**References**


### Classroom Intervention Planning Sheet

This worksheet is designed to help teachers to quickly create classroom plans for academic and behavioral interventions.

#### Case Information

**What to Write:** Record the important case information, including student, person delivering the intervention, date of plan, start and end dates for the intervention plan, and the total number of instructional weeks that the intervention will run.

<table>
<thead>
<tr>
<th>Student:</th>
<th>Interventionist(s):</th>
<th>Date Intervention Plan Was Written:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Date Intervention is to Start:</strong></td>
<td><strong>Date Intervention is to End:</strong></td>
<td><strong>Total Number of Intervention Weeks:</strong></td>
</tr>
</tbody>
</table>

**Description of the Student Problem:**

#### Intervention

**What to Write:** Write a brief description of the intervention(s) to be used with this student. **TIP:** If you have a script for this intervention, you can just write its name here and attach the script to this sheet.

#### Materials

**What to Write:** Jot down materials (e.g., flashcards) or resources (e.g., Internet-connected computer) needed to carry out this intervention.

#### Training

**What to Write:** Note what training—if any—is needed to prepare adult(s) and/or the student to carry out the intervention.

#### Progress-Monitoring

**What to Write:** Select a method to monitor student progress on this intervention. For the method selected, record what type of data is to be used, enter student baseline (starting-point) information, calculate an intervention outcome goal, and note how frequently you plan to monitor the intervention. **Tip:** Several ideas for classroom data collection appear on the right side of this table.

<table>
<thead>
<tr>
<th>Type of Data Used to Monitor:</th>
<th>Ideas for Intervention Progress-Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>• Existing data: grades, homework logs, etc.</td>
</tr>
<tr>
<td>Outcome Goal</td>
<td>• Cumulative mastery log</td>
</tr>
<tr>
<td></td>
<td>• Rubric</td>
</tr>
<tr>
<td></td>
<td>• Curriculum-based measurement</td>
</tr>
<tr>
<td></td>
<td>• Behavior report card</td>
</tr>
<tr>
<td></td>
<td>• Behavior checklist</td>
</tr>
</tbody>
</table>

How often will data be collected? (e.g., daily, every other day, weekly):
# Classroom Intervention Planning Sheet

## Case Information

**What to Write:** Record the important case information, including student, person delivering the intervention, date of plan, start and end dates for the intervention plan, and the total number of instructional weeks that the intervention will run.

<table>
<thead>
<tr>
<th>Student: Patricia M.</th>
<th>Interventionist(s): Mrs. Cardamone, Social Studies</th>
<th>Date Intervention Plan Was Written: 4 Feb 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date Intervention is to Start: 11 Feb 2013</td>
<td>Date Intervention is to End: 8 March 2013</td>
<td>Total Number of Intervention Weeks: 4</td>
</tr>
</tbody>
</table>

**Description of the Student Problem:** Student has difficulty summarizing and retaining key information from social studies course readings.

## Intervention

**What to Write:** Write a brief description of the intervention(s) to be used with this student. TIP: If you have a script for this intervention, you can just write its name here and attach the script to this sheet.

- Text Lookback (see attached script)
- Question Generation (see attached script)

## Materials

**What to Write:** Jot down materials (e.g., flashcards) or resources (e.g., Internet-connected computer) needed to carry out this intervention.

- Index cards for question generation

## Training

**What to Write:** Note what training—if any—is needed to prepare adult(s) and/or the student to carry out the intervention.

- Meet with Patricia before starting intervention to train to use both intervention strategies. NOTE: Use past course readings to demonstrate reading comprehension strategies.

## Progress-Monitoring

**What to Write:** Select a method to monitor student progress on this intervention. For the method selected, record what type of data is to be used, enter student baseline (starting-point) information, calculate an intervention outcome goal, and note how frequently you plan to monitor the intervention. TIP: Several ideas for classroom data collection appear on the right side of this table.

<table>
<thead>
<tr>
<th>Type of Data Used to Monitor:</th>
<th>Ideas for Intervention Progress-Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Student self-assessment of reading comprehension using 4-pt rating scale: 0=Did not understand rdng; 4=Fully understood rdng</td>
<td></td>
</tr>
<tr>
<td>2. Quiz grades</td>
<td>- Existing data: grades, homework logs, etc.</td>
</tr>
<tr>
<td>Baseline</td>
<td>- Cumulative mastery log</td>
</tr>
<tr>
<td>3 student self-ratings: 1.6 average</td>
<td>- Rubric</td>
</tr>
<tr>
<td>3 quiz grades: 65 average</td>
<td>- Curriculum-based measurement</td>
</tr>
<tr>
<td>Outcome Goal</td>
<td>- Behavior report card</td>
</tr>
<tr>
<td>student self-ratings: 3.5 average quiz grades: 75 average</td>
<td>- Behavior checklist</td>
</tr>
</tbody>
</table>

**How often will data be collected? (e.g., daily, every other day, weekly):**

- Self-Assessment: after each assigned reading; quiz grades: weekly

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How To: Structure Classroom Data Collection for Individual Students

When a student is struggling in the classroom, the teacher will often implement an intervention matched to the student's deficient academic skills. However, classroom interventions are incomplete if the teacher is not also collecting data to document whether those interventions are actually benefiting students. Indeed, an intervention can be viewed as 'fatally flawed' (Witt, VanDerHeyden & Gilbertson, 2004) if it lacks any one of these 4 data elements:

- **Problem definition.** The teacher clearly and specifically defines the presenting student problem(s) needing intervention. If the student problem is not clearly defined, the teacher cannot accurately measure or fix it.

- **Baseline performance.** The teacher assesses the student's current skill or performance level (baseline performance) in the identified area(s) of concern. If the teacher lacks baseline information, he or she cannot judge at the end of the intervention how much progress was actually made.

- **Intervention goal.** Before starting the intervention, the teacher sets a specific outcome goal for student improvement. Without a goal in place before the start of the intervention, the teacher cannot judge at the end of the intervention whether it has in fact been a success.

- **Ongoing progress-monitoring.** The teacher selects a method to monitor the student's progress formatively during the intervention. Without ongoing monitoring of progress, the teacher is 'flying blind', unable to judge whether the intervention is effective in helping the student to attain the outcome goal.

**Bringing Structure to Classroom Data-Collection. The Student Intervention: Monitoring Worksheet.** As teachers take on the role of 'first responder' interventionist, they are likely to need guidance – at least initially—in the multi-step process of setting up and implementing classroom data collection, as well as interpreting the resulting data.

A form designed to walk teachers through the data-collection process—The Student Intervention: Progress-Monitoring Worksheet—appears at the end of this document, along with a completed example. The Worksheet is a 7-step 'wizard' form to show teachers how to structure their progress-monitoring to ensure that their data collection is adequate to the task of measuring the impact of their classroom interventions:

**Identify the student problem.** The teacher defines the student problem in clear, specific terms that allow the instructor to select an appropriate source of classroom assessment to measure and monitor the problem.

**Decide on a data collection method.** The teacher chooses a method for collecting data that can be managed in the classroom setting and that will provide useful information about the student problem. Examples of data collection methods are curriculum-based measurement (e.g., oral reading fluency; correct writing sequences), behavior-frequency counts, and daily behavior report cards. When selecting a data collection method, the teacher also decides how frequently that data will be collected during intervention progress-monitoring. In some cases, the method of data collection being used will dictate monitoring frequency. For example, if homework completion and accuracy is being tracked, the frequency of data collection will be equal to the frequency of homework assignments. In other cases, the level of severity of the student problem will dictate monitoring frequency. In schools implementing Response to Intervention (RTI), students on Tier 2 (standard-protocol) interventions should be monitored 1-2 times per month, for example, while students on Tier 3 (intensive problem-solving protocol) interventions should be monitored at least weekly (Burns & Gibbons, 2008).
Collect data to calculate baseline. The teacher should collect 3-5 data-points prior to starting the intervention to calculate the student's baseline, or starting point, in the skill or behavior that is being targeted for intervention. The student's baseline performance serves as an initial marker against which to compare his or her outcome performance at the end of the intervention. (Also,--because baseline data points are collected prior to the start of the intervention--they collectively can serve as an prediction of the trend, or rate of improvement, if the student's current academic program were to remain unchanged with no additional interventions attempted.) In calculating baseline, the teacher has the option of selecting the median, or middle, data-point, or calculating the mean baseline performance.

Determine the timespan of the intervention. The length of time reserved for the intervention should be sufficient to allow enough data to be collected to clearly demonstrate whether that intervention was successful. For example, it is recommended that a high-stakes intervention last at least 8 instructional weeks (e.g., Burns & Gibbons, 2008).

Set an intervention goal. The teacher calculates a goal for the student that, if attained by the end of the intervention period, will indicate that the intervention was successful.

Decide how student progress is to be summarized. A decision that the teacher must make prior to the end of the intervention period is how he or she will summarize the actual progress-monitoring data. Because of the variability present in most data, the instructor will probably not elect simply to use the single, final data point as the best estimate of student progress. Better choices are to select several (e.g. 3) of the final data points and either select the median value or calculate a mean value. For charted data with trendline, the teacher may calculate the student’s final performance level as the value of the trendline at the point at which it intercepts the intervention end-date.

Evaluate the intervention outcome. At the conclusion of the intervention, the teacher directly compares the actual student progress (summarized in the previous step) with the goal originally set. If actual student progress meets or exceeds the goal, the intervention is judged to be successful.

References


RTI Classroom Progress-Monitoring Worksheet

Student: ___ Brian Jones ___ Teacher: ____ Mrs. Braniff ____ Classroom or Course: Gr 6 _________

A. Identify the Student Problem: Describe in clear, specific terms the student academic or behavioral problem:

Need to Become Fluent in Multiplication Facts: 0 to 9 __________________________

B. Select a Data Collection Method: Choose a method of data collection to measure whether the classroom intervention actually improves the identified student problem (e.g., curriculum-based measurement, etc.).

Curriculum-Based Measurement: 2-Minute Timed Math Computation Probes

How frequently will this data be collected?: 1 times per Week

C. Collect Data to Calculate Baseline: What method from the choices below will be used to estimate the student’s baseline (starting) performance? (NOTE: Generally, at least 3-5 baseline data points are recommended.)

☑ From a total of 3 observations, select the median value.
☐ Other: ____________________________

☑ From a total of ___ observations, calculate the mean value.

<table>
<thead>
<tr>
<th>Baseline Performance: Based on the method selected above, it is calculated that the student’s baseline performance is:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date: <em><em>11</em>/ <em><em>14</em>/2011 Obsv: <em>31</em></em></em></td>
</tr>
<tr>
<td>Date: <em><em>11</em>/ <em><em>17</em>/2011 Obsv: <em>28</em></em></em></td>
</tr>
</tbody>
</table>

D. Determine Intervention Timespan: The intervention will last 6 instructional weeks and end on __1_/ __13__/2012

E. Set a Performance Goal: What goal is the student expected to achieve if the intervention is successful?

At the end of the intervention, it is predicted that the student will reach this performance goal:

____40 Correct Digits in 2 minutes

F. Decide How Student Progress is to Be Summarized: Select a method for summarizing student progress (‘outcome’) attained when the intervention ends. Student progress at the end of the intervention is to be summarized by:

☐ Selecting the median value from the final ___ data-points (e.g.,3).

☐ Computing the mean value from the final ___ data-points (e.g.,3).

☐ [For time-series graphs]: Calculating the value on the graph trend line at the point that it intercepts the intervention end date.

G. Evaluate the Intervention Outcome:

At the end of the intervention, compare student progress to goal. If actual progress meets or exceeds goal, the intervention is judged successful.

<table>
<thead>
<tr>
<th>The student’s ACTUAL Progress (Step F) is:</th>
<th>The PERFORMANCE GOAL for improvement (Step E) is:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>42</strong></td>
<td><strong>40</strong></td>
</tr>
</tbody>
</table>

Progress-Monitoring

<table>
<thead>
<tr>
<th>Date: <em><em>12</em>/ <em><em>02</em>/2011 Obsv: <em>29</em></em></em></th>
<th>Date: <em><em>12</em>/ <em><em>09</em>/2011 Obsv: <em>34</em></em></em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Date: <em><em>12</em>/ <em><em>16</em>/2011 Obsv: <em>35</em></em></em></td>
<td>Date: <em><em>12</em>/ <em><em>22</em>/2011 Obsv: <em>39</em></em></em></td>
</tr>
<tr>
<td>Date: <em><em>01</em>/ <em><em>06</em>/2012 Obsv: <em>41</em></em></em></td>
<td>Date: <em><em>01</em>/ <em><em>13</em>/2012 Obsv: <em>43</em></em></em></td>
</tr>
<tr>
<td>Date: <strong>/</strong>/ ___ Obsv: ______</td>
<td>Date: <strong>/</strong>/ ___ Obsv: ______</td>
</tr>
<tr>
<td>Date: <strong>/</strong>/ ___ Obsv: ______</td>
<td>Date: <strong>/</strong>/ ___ Obsv: ______</td>
</tr>
<tr>
<td>Date: <strong>/</strong>/ ___ Obsv: ______</td>
<td>Date: <strong>/</strong>/ ___ Obsv: ______</td>
</tr>
</tbody>
</table>
Student Intervention: Progress-Monitoring Worksheet

Student: ___________________ Teacher: ___________________ Classroom or Course: ___________________

A. Identify the Student Problem: Describe in clear, specific terms the student academic or behavioral problem:

_____________________________________________________________________________________________________________________________________________________

B. Select a Data Collection Method: Choose a method of data collection to measure whether the classroom intervention actually improves the identified student problem (e.g., curriculum-based measurement, etc.).

_____________________________________________________________________________________________________________________________________________________

How frequently will this data be collected?: __________ times per ____________

C. Collect Data to Calculate Baseline: What method from the choices below will be used to estimate the student’s baseline (starting) performance? (NOTE: Generally, at least 3-5 baseline data points are recommended.)

☐ From a total of _____ observations, select the median value. ☐ Other: __________________________

☐ From a total of _____ observations, calculate the mean value.

Baseline

| Date: __/__/__ | Obsv: __________ |
|______________|______________|
| 1. Date: __/__/__ | Obsv: __________ |
| 2. Date: __/__/__ | Obsv: __________ |

Baseline Performance: Based on the method selected above, it is calculated that the student’s baseline performance is:

_____________________________________________________________________________________________________________________________________________________

D. Determine Intervention Timespan: The intervention will last _______ instructional weeks and end on ____/____/____.

E. Set a Performance Goal: What goal is the student expected to achieve if the intervention is successful?

At the end of the intervention, it is predicted that the student will reach this performance goal:

_____________________________________________________________________________________________________________________________________________________

F. Decide How Student Progress is to Be Summarized: Select a method for summarizing student progress (‘outcome’) attained when the intervention ends. Student progress at the end of the intervention is to be summarized by:

☐ Selecting the median value from the final _____ data-points (e.g.,3).

☐ Computing the mean value from the final _____ data-points (e.g.,3).

☐ [For time-series graphs]: Calculating the value on the graph trend line at the point that it intercepts the intervention end date.

G. Evaluate the Intervention Outcome:

At the end of the intervention, compare student progress to goal. If actual progress meets or exceeds goal, the intervention is judged successful.

Progress-Monitoring

| Date: __/__/__ | Obsv: __________ |
|______________|______________|
| 1. Date: __/__/__ | Obsv: __________ |
| 2. Date: __/__/__ | Obsv: __________ |
| 3. Date: __/__/__ | Obsv: __________ |
| 4. Date: __/__/__ | Obsv: __________ |

The student’s ACTUAL Progress (Step F) is:

The PERFORMANCE GOAL for improvement (Step E) is:

_____________________________________________________________________________________________________________________________________________________

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Teaching Positive Behaviors: The Power of Checklists

Educators frequently need to define positive student behaviors so that they can teach the student to perform them; take data on them; communicate with others about them; and/or encourage the student to monitor them.

**Making Behavior Checklists.** One useful way to define a goal behavior is to break it down into a series of steps in checklist format. The process of breaking down a larger behavior goal (‘task’) into individual steps is called a ‘task analysis’.

Creating a behavior checklist is straightforward. Often, you can just analyze the larger task and use common sense to break it down into smaller steps. Sometimes it is also helpful to get the advice of an expert as you prepare your behavior checklist. For example, if you want to create a checklist that a student will follow to solve a math word problem, you might ask the math teacher for guidance in constructing the steps. Or, if you are developing a checklist to train a student to wash her hands, you might consult the school nurse for expert advice on the sequence of steps to include.

The task-analysis examples below show how broader behavior goals (“The student is ready to learn at the start of class”; “The student takes a bathroom break”) can be converted into more specific steps that can be taught, observed, and measured.

**Behavior Checklist Example: The student is ready to learn at the start of class.**

<table>
<thead>
<tr>
<th>At the start of class, the student:</th>
</tr>
</thead>
<tbody>
<tr>
<td>❑ has a sharpened pencil.</td>
</tr>
<tr>
<td>❑ has paper for taking notes.</td>
</tr>
<tr>
<td>❑ has cleared his/her desk of unneeded materials.</td>
</tr>
<tr>
<td>❑ has homework ready to turn in.</td>
</tr>
<tr>
<td>❑ has put his/her cellphone in backpack.</td>
</tr>
<tr>
<td>❑ is sitting quietly.</td>
</tr>
<tr>
<td>❑ is working on the start-of-class assignment.</td>
</tr>
</tbody>
</table>
Behavior Checklist Example: The student takes a bathroom break.

<table>
<thead>
<tr>
<th>When taking a bathroom break, the student:</th>
</tr>
</thead>
<tbody>
<tr>
<td>❑ takes the classroom bathroom pass from its hook.</td>
</tr>
<tr>
<td>❑ quietly leaves the classroom.</td>
</tr>
<tr>
<td>❑ walks directly to and from the bathroom, avoiding conversations and distractions along the way.</td>
</tr>
<tr>
<td>❑ returns to the classroom within 5 minutes.</td>
</tr>
<tr>
<td>❑ hangs up the bathroom pass and returns quietly to seat.</td>
</tr>
</tbody>
</table>

You can use a free web-based app, the Self-Check Behavior Checklist Maker, to create customized behavior checklists. This app is available at:


**Teaching Positive Behaviors Using Checklists.** Positive behaviors must be taught. This direct-instruction sequence can help your students to both correctly master and actually engage in expected behaviors. This framework includes four major stages:

**Show Them.** Using your behavior checklist as a guide, you explain and explicitly model expected (“target”) behaviors.

**Watch and Praise Them.** Students practice target behaviors under your supervision--and you give frequent corrective feedback and praise.

**Practice, Practice, Practice.** Students engage in behaviors independently with your encouragement and reinforcement.

**Prompt Behaviors Across Settings.** With your prompting and feedback, students are able to display target behaviors appropriately across a variety of settings or situations (“generalization”).

**Reference**

Setting Individual RTI Academic Performance Goals for the *Off-Level* Student Using Research Norms

Students with *significant* academic deficits can present particular challenges as teachers attempt to match them to appropriate RTI supplemental academic interventions. Often, these Tier 2/3 interventions are ‘off-level’; that is, they target academic skills that are below the student’s grade placement.

It might be a mistake, however, to measure the student using only assessments from the student’s grade of record if that student has significant academic delays. The problem with monitoring the progress of an off-level student using only assessments from the current grade level is that these assessments could prove so difficult that they fail to show the true gains that the student is making on the off-level intervention. For students with significant academic delays, then, the school must follow sensible and consistent guidelines for matching those students to appropriate supplemental off-level interventions, for setting performance goals, and for measuring their academic progress that will both benefit the student and accurately reflect actual student growth.

First, it should be acknowledged that goal-setting is an essential part of any student’s RTI intervention plan. To set a goal for student academic performance, these elements are needed:

- **The student’s baseline academic performance.** Prior to starting the intervention, the teacher calculates baseline performance by assessing the target student several times with the academic measure that will be used to measure that student’s progress once the intervention begins.

- **Estimate of ‘typical’ peer performance.** The teacher has a reliable estimate of expected or typical peer performance on the academic measure that will be used to measure the target student’s progress.

- **Estimate of expected weekly progress.** The teacher selects a rate of weekly academic progress that the target student is expected to attain if the intervention is successful.

- **Number of weeks for the intervention trial.** The teacher decides on how many weeks the RTI intervention will last, as the cumulative, final academic goal can be calculated only when the entire timespan of the intervention is known.

The remainder of this article describes how the formulation of academic goals for students who receive ‘off-level’ supplemental interventions will always contain the four universal goal-setting elements described above—but includes special instructions for estimating typical peer performance and expected weekly progress for this group.

Below is a 6-step process adapted from Shapiro (2008) for finding the optimal ‘off-level’ grade for monitoring a student with substantial academic deficits, for setting progress-monitoring goals for that student, and for adjusting periodically the student’s intervention and monitoring to reflect growth in student skills:

1. **Obtain Research-Derived Academic Screening Norms With Percentile Cut-Points.** The process of finding a student’s appropriate off-level placement in academic intervention begins with the school selecting a set of research-derived academic screening norms. These norms should include values for fall, winter, and spring of each grade and should be broken down into percentile cut-offs (e.g., norms at the 10th percentile, 25th percentile, 50th percentile, etc.). Commercially available screening packages such as AIMSweb (http://www.aimsweb.com) provide such norms. Or schools can go to other sources to obtain research norms with percentile cut-points for
reading fluency (e.g., Tindal, Hasbrouck & Jones, 2005; EasyCBM, 2010) and additional academic areas (e.g., EasyCBM, 2010).

*Case Example:* Mrs. Chandler is a 4th-grade teacher in a school whose district has adopted AIMSweb literacy screening tools. The district selected AIMSweb in part because the product includes national norms spanning elementary and middle-school grades that are divided into percentile cut-offs at each grade level.

2. **Determine Cut-Points on Research Norms That Indicate Optimal Instructional Placement.** Research norms with percentile cut-offs are essential for deciding a student’s appropriate instructional match for supplemental intervention. When reviewing its research-derived screening norms, the school sets percentile cut-offs that designate appropriate instructional placement and mastery at each grade level. Shapiro (2008) recommends that, when consulting research norms at any grade level:

- the 25th percentile serve as the cut-point for determining that a student has the *minimum* academic skills needed to experience success in that material. (Please note, though, that norms from other popular academic screening tools—e.g., easyCBM.com—set the 20th percentile as the minimum-skills cut-point.)
- the 50th percentile should serve as the cut-point for defining that the student has attained ‘mastery’ on the grade-level academic skill.

*Case Example:* Using the AIMSweb norms, Mrs. Chandler's school decides that when assessed on literacy screening tools at any grade level, a student will be considered as falling within the instructional range if he or she performs within the 25th to 49th percentile and as having achieved mastery if he or she performs at or above the 50th percentile.

3. **Find the Target Student’s Optimal ‘Off-Level’ Instructional Match Through a ‘Survey-Level’ Assessment.** The school must next find the struggling student’s appropriate ‘instructional match’—the level of task difficulty that will allow the student to experience sufficient success on off-level interventions while also ensuring a monitoring plan that can accurately track the student’s true growth on that intervention. The process used to find the student’s instructional match is called a ‘survey-level’ assessment.

   The school administers to the target student a series of standardized curriculum-based measures (CBMs) in the area of academic concern. These CBMs start at the level of the student’s *current* grade placement and work downward, testing the student at successively earlier grade levels.

   For each grade-level CBM administered, the teacher scores that ‘off-level’ CBM and compares the student results to research norms.

   - If the student performs *at or above* the 25th percentile with materials drawn from a particular ‘off-level’ grade, the teacher judges that the student is likely to experience a good match using intervention and assessment materials at this grade level—and the Survey Level Assessment ends here.
   - However, if the student performs *below* the 25th percentile, it is judged that material at that grade level is too challenging for use in monitoring the student’s progress on intervention. The teacher instead continues to administer CBMs from successively earlier grade levels, stopping only at the grade-level at which the student performs at or above the 25th percentile according to the research norms.
Case Example: In January, Mrs. Chandler reviews her classwide reading fluency screening results. She notes that a student who has recently transferred to her classroom, Randy, performed at 35 Words Read Correct (WRC) on the 1-minute AIMSweb Grade 4 fluency probes.

Mrs. Chandler consults AIMSweb reading-fluency research norms and finds that a reasonable minimum reading rate for students by winter of grade 4 (25th percentile) is 89 WRC. Because Randy’s reading fluency rate is so far below the grade-level norms (a gap of 54 WRC), his teacher decides to conduct a Survey Level Assessment to find the student’s optimal grade level placement for supplemental reading instruction.

- On Grade 3-level probes, Randy attains a median score of 48 WRC. The AIMSweb winter norm (25th percentile) for a 3rd grade student is 69 WRC. The student is still in the ‘frustration’ range and the Survey Level Assessment continues.

- On Grade 2-level probes, Randy attains a median score of 64 WRC. The AIMSweb winter norm (25th percentile) for a 2nd grade student is 53 WRC. The student is now in the ‘instructional’ range and the Survey Level Assessment ends.

4. **Determine an ‘Off-Level’ Progress-Monitoring Goal Based on Norms.** To set an intervention progress-monitoring goal, the teacher looks up and uses the academic performance norm for the 50th percentile at the student’s off-level ‘instructional’ grade level previously determined through the Survey Level Assessment.

Case Example: To find the progress-monitoring goal for Randy, his teacher Mrs. Chandler looks up the benchmark Words Read Correct (WRC) for the 50th percentile at Grade 2 on the fall screening norms (Randy’s off-level ‘instructional’ grade level)—which is 79 WRC. This becomes the progress-monitoring goal for the student.

5. **Translate the Student’s Long-Term Progress-Monitoring Goal into Weekly Increments.** The teacher’s final task before beginning to monitor the student’s progress on intervention is to translate the student’s ultimate intervention goal into ‘ambitious but realistic’ weekly increments. A useful method (Shapiro, 2008) for determining weekly growth rates is to start with research-derived growth norms and to then use a ‘multiplier’ to make the expected rate of weekly growth more ambitious.

The teacher first looks up the average rate of weekly student growth supplied in the research norms.

- If available, a good rule of thumb is to use the growth norms for the 50th percentile at the ‘off-level’ grade at which the student is receiving intervention and being monitored.

- If a screening tool’s academic-performance norms do not also include growth norms, schools can compute the ‘typical’ rate of weekly progress for any grade-level by (1) subtracting the fall screening results (50th percentile) for the off-level grade from the spring screening results (50th percentile) and (2) dividing the difference by 32—representing the typical 32 weeks that separate fall and spring screenings in most schools. The resulting quotient represents ‘average’ expected rate of student progress per instructional week on that academic screening measure at that grade level.

The teacher then multiplies this grade norm for weekly growth by a multiplier whose value falls between 1.5 and 2.0 (Shapiro, 2008). Because the original weekly growth rate represents only a typical rate of academic
improvement, this multiplier is used to boost the target student’s weekly growth estimate to a point at which learning is accelerated and the gap separating that student from peers will likely close if the intervention is successful.

Case Example: Randy, the 4th-grade student, is to be monitored on intervention at grade 2. Mrs. Chandler finds—using AIMSweb norms—that a typical student in Grade 2 (at the 50th percentile) has a rate of improvement of 1.1 Words Read Correct (WRC) per week. Based on her own judgment, Mrs. Chandler selects 1.8 as her multiplier—although any figure between 1.5 and 2.0 would be acceptable. She multiplies the 1.1 WRC figure by 1.8 to obtain an ambitious weekly growth goal for Randy of about 2.0 additional WRCs.

Randy’s ultimate ‘graduation goal’ that would allow him to advance beyond grade 2 as his supplemental intervention level is 79 WRC (the 50th percentile norm for grade 2). During the Survey Level Assessment, Randy was found to read 64 WRC at the 2nd grade level. There is a 15-WRC gap to be closed to get Randy to his goal. At 2 additional WRC per week on intervention, Randy should close the gap within about 8 instructional weeks.

6. Gradually Advance the Student to Higher Grade Levels for Intervention & Progress-Monitoring. The teacher monitors the student’s growth in the target academic skill at least once per week (twice per week is ideal). When, according to the research norms for his or her off-level grade, the student’s performance exceeds the 50th percentile, the teacher reassesses the student’s academic skills at the next higher grade, again using the research-based norms. If the student performs at or above the 25th percentile on probes from that next grade level, the teacher can move the student up with confidence and begin to monitor at the higher grade level. The process repeats until the student eventually closes the gap with peers and is being monitored at grade of placement.

Case Example: His teacher, Ms. Chandler, notes that after 7 weeks of intervention, Randy is now reading 82 Words Read Correct (WRC)—exceeding the 79 WRC for the 50th percentile of students in Grade 2 (winter norms). So Mrs. Chandler assesses Randy on AIMSweb reading fluency probes for Grade 3 and finds that he reads on average 72 WRC —exceeding the 3rd grade 25th percentile cut-off of 69 WRC. Therefore, Randy is advanced to Grade 3 progress-monitoring and his intervention materials are adjusted accordingly.

Recommendations for using this approach: Research norms for student performance and academic growth are the ‘gold standard’ in off-level goal-setting, as they provide fixed, external standards for proficiency that are not influenced by variable levels of student skill in local classrooms. When setting academic goals for struggling students, schools should use research norms whenever they are available. In particular, research norms should be used for high-stakes RTI cases that may be referred at some point to the Special Education Eligibility Team.

References


The Instructional Hierarchy: Linking Stages of Learning to Effective Instructional Techniques

When mastering new academic skills or strategies, the student learner typically advances through a predictable series of learning stages. At the start, a student is usually halting and uncertain as he or she tries to use the target skill. With teacher feedback and lots of practice, the student becomes more fluent, accurate, and confident in using the skill. It can be very useful to think of these phases of learning as a hierarchy (See chart below). The learning hierarchy (Haring, Lovitt, Eaton, & Hansen, 1978) has four stages: acquisition, fluency, generalization, and adaptation:

1. **Acquisition.** The student has begun to learn how to complete the target skill correctly but is not yet accurate or fluent in the skill. The goal in this phase is to improve accuracy.

2. **Fluency.** The student is able to complete the target skill accurately but works slowly. The goal of this phase is to increase the student’s speed of responding (fluency).

3. **Generalization.** The student is accurate and fluent in using the target skill but does not typically use it in different situations or settings. Or the student may confuse the target skill with ‘similar’ skills. The goal of this phase is to get the student to use the skill in the widest possible range of settings and situations, or to accurately discriminate between the target skill and ‘similar’ skills.

4. **Adaptation.** The student is accurate and fluent in using the skill. He or she also uses the skill in many situations or settings. However, the student is not yet able to modify or adapt the skill to fit novel task-demands or situations. Here the goal is for the student to be able to identify elements of previously learned skills that he or she can adapt to the new demands or situation.

When the teacher accurately identifies a student’s learning stage, the instructor can select instructional ideas that are more likely to be successful because these strategies match the student’s learning needs.

**Reference**
### Instructional Hierarchy: Matching Interventions to Student Learning Stage (Haring, et al., 1978)

<table>
<thead>
<tr>
<th>Learning Stage</th>
<th>Student ‘Look-Fors’…</th>
<th>What strategies are effective…</th>
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| **Acquisition:** Exit Goal: The student can perform the skill accurately with little adult support. | - Is just beginning to learn skill  
- Not yet able to perform learning task reliably or with high level of accuracy | - Teacher actively demonstrates target skill  
- Teacher uses ‘think-aloud’ strategy—especially for thinking skills that are otherwise covert  
- Student has models of correct performance to consult as needed (e.g., correctly completed math problems on board)  
- Student gets feedback about correct performance  
- Student receives praise, encouragement for effort |

| Fluency: Exit Goals: The student (a) has learned skill well enough to retain (b) has learned skill well enough to combine with other skills, (c) is as fluent as peers. | - Gives accurate responses to learning task  
- Performs learning task slowly, haltingly | - Teacher structures learning activities to give student opportunity for active (observable) responding  
- Student has frequent opportunities to drill (direct repetition of target skill) and practice (blending target skill with other skills to solve problems)  
- Student gets feedback on fluency and accuracy of performance  
- Student receives praise, encouragement for increased fluency |

| Generalization: Exit Goals: The student (a) uses the skill across settings, situations; (b) does not confuse target skill with similar skills | - Is accurate and fluent in responding  
- May fail to apply skill to new situations, settings  
- May confuse target skill with similar skills (e.g., confusing ‘+’ and ‘x’ number operation signs) | - Teacher structures academic tasks to require that the student use the target skill regularly in assignments.  
- Student receives encouragement, praise, reinforcers for using skill in new settings, situations  
- If student confuses target skill with similar skill(s), the student is given practice items that force him/her to correctly discriminate between similar skills  
- Teacher works with parents to identify tasks that the student can do outside of school to practice target skill  
- Student gets periodic opportunities to review, practice target skill to ensure maintenance |

| Adaptation: Exit Goal: The Adaptation phase is continuous and has no exit criteria. | - Is fluent and accurate in skill  
- Applies skill in novel situations, settings without prompting  
- Does not yet modify skill as needed to fit new situations (e.g., child says ‘Thank you’ in all situations, does not use modified, equivalent phrases such as “I appreciate your help.”) | - Teacher helps student to articulate the ‘big ideas’ or core element(s) of target skill that the student can modify to face novel tasks, situations (e.g., fractions, ratios, and percentages link to the ‘big idea’ of the part in relation to the whole; ‘Thank you’ is part of a larger class of polite speech)  
- Train for adaptation: Student gets opportunities to practice the target skill with modest modifications in new situations, settings with encouragement, corrective feedback, praise, other reinforcers.  
- Encourage student to set own goals for adapting skill to new and challenging situations. |