



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:

- A. *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.
- B. *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).

- C. *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.
- D. *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).
- E. *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.
- F. *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.
- G. *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

Burns, M. K., & Gibbons, K. A. (2008). *Implementing response-to-intervention in elementary and secondary schools*. Routledge: New York.

Witt, J. C., VanDerHeyden, A. M., & Gilbertson, D. (2004). Troubleshooting behavioral interventions. A systematic process for finding and eliminating problems. *School Psychology Review, 33*, 363-383.



Student Intervention: Progress-Monitoring Worksheet

Student: Brian Jones Teacher: Mrs. Braniff Classroom or Course: Gr 3

SET-UP

BASELINE

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. _____

Baseline	3. Date: <u>11 / 21 /2011</u> Obsv: <u>34</u>
1. Date: <u>11 / 14 /2011</u> Obsv: <u>31</u>	4. Date: <u> </u> / <u> </u> / <u> </u> Obsv: <u> </u>
2. Date: <u>11 / 17 /2011</u> Obsv: <u>28</u>	5. Date: <u> </u> / <u> </u> / <u> </u> Obsv: <u> </u>

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

31 Correct Digits in 2 minutes

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 2 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.

The student's ACTUAL Progress (Step F) is:	42
The PERFORMANCE GOAL for improvement (Step E) is:	40

PROGRESS-MONITORING

Progress-Monitoring	5. Date: <u>01 / 06 /2012</u> Obsv: <u>41</u>
1. Date: <u>12 / 02 /2011</u> Obsv: <u>29</u>	6. Date: <u>01 / 13 /2012</u> Obsv: <u>43</u>
2. Date: <u>12 / 09 /2011</u> Obsv: <u>34</u>	7. Date: <u> </u> / <u> </u> / <u> </u> Obsv: <u> </u>
3. Date: <u>12 / 16 /2011</u> Obsv: <u>35</u>	8. Date: <u> </u> / <u> </u> / <u> </u> Obsv: <u> </u>
4. Date: <u>12 / 22 /2011</u> Obsv: <u>39</u>	9. Date: <u> </u> / <u> </u> / <u> </u> Obsv: <u> </u>



Student Intervention: Progress-Monitoring Worksheet

Student: _____ Teacher: _____ Classroom or Course: _____

SET-UP

BASELINE

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	3. Date: ___/___/___ Obsv: _____
1. Date: ___/___/___ Obsv: _____	4. Date: ___/___/___ Obsv: _____
2. Date: ___/___/___ Obsv: _____	5. Date: ___/___/___ Obsv: _____

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

PROGRESS-MONITORING

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.

The student's ACTUAL Progress (Step F) is:	
The PERFORMANCE GOAL for improvement (Step E) is:	

Progress-Monitoring	5. Date: ___/___/___ Obsv: _____
1. Date: ___/___/___ Obsv: _____	6. Date: ___/___/___ Obsv: _____
2. Date: ___/___/___ Obsv: _____	7. Date: ___/___/___ Obsv: _____
3. Date: ___/___/___ Obsv: _____	8. Date: ___/___/___ Obsv: _____
4. Date: ___/___/___ Obsv: _____	9. Date: ___/___/___ Obsv: _____



Student: _____	Grade: _____
Teacher: _____	School Year: _____

Progress-Monitoring (Cont.)
10. Date: ___/___/___ Obsv: _____
11. Date: ___/___/___ Obsv: _____
12. Date: ___/___/___ Obsv: _____
13. Date: ___/___/___ Obsv: _____
14. Date: ___/___/___ Obsv: _____
15. Date: ___/___/___ Obsv: _____
16. Date: ___/___/___ Obsv: _____
17. Date: ___/___/___ Obsv: _____
18. Date: ___/___/___ Obsv: _____
19. Date: ___/___/___ Obsv: _____
20. Date: ___/___/___ Obsv: _____
21. Date: ___/___/___ Obsv: _____
22. Date: ___/___/___ Obsv: _____
23. Date: ___/___/___ Obsv: _____
24. Date: ___/___/___ Obsv: _____
25. Date: ___/___/___ Obsv: _____
26. Date: ___/___/___ Obsv: _____
27. Date: ___/___/___ Obsv: _____
28. Date: ___/___/___ Obsv: _____
29. Date: ___/___/___ Obsv: _____

Progress-Monitoring (Cont.)
30. Date: ___/___/___ Obsv: _____
31. Date: ___/___/___ Obsv: _____
32. Date: ___/___/___ Obsv: _____
33. Date: ___/___/___ Obsv: _____
34. Date: ___/___/___ Obsv: _____
35. Date: ___/___/___ Obsv: _____
36. Date: ___/___/___ Obsv: _____
37. Date: ___/___/___ Obsv: _____
38. Date: ___/___/___ Obsv: _____
39. Date: ___/___/___ Obsv: _____
40. Date: ___/___/___ Obsv: _____
41. Date: ___/___/___ Obsv: _____
42. Date: ___/___/___ Obsv: _____
43. Date: ___/___/___ Obsv: _____
44. Date: ___/___/___ Obsv: _____
45. Date: ___/___/___ Obsv: _____
46. Date: ___/___/___ Obsv: _____
47. Date: ___/___/___ Obsv: _____
48. Date: ___/___/___ Obsv: _____
49. Date: ___/___/___ Obsv: _____