

# Data-driven decision making

“Find out what is working. Do more of it.”

– Steve de Shazer,  
Developer of solution focused brief therapy

Gathering and using data about a student’s behaviour helps school staff to:

- better understand the purpose and context of specific behaviours
- guide the development and implementation of behaviour support programming
- know when a behaviour is improving.

Initially, collecting data about a student’s problem behaviour provides valuable information about possible reasons for the behaviour. To collect this data, the learning team systematically observes, records and analyzes the student’s behaviour across school settings.

Once staff have sufficient data on a student’s behaviour, they are better prepared to make decisions about:

- strategies for changing or replacing a problem behaviour
- developing an individual behaviour support plan
- evaluating and assessing the student’s program and progress.

## Data collection procedures<sup>14</sup>

Collect baseline data before beginning to teach new skills or develop plans for reinforcement and positive behaviour support. Use this data to compare students’ performance at the outset with their performance at later dates.

Baseline data includes the frequency of a behaviour, the amount of time the behaviour is observed and/or the level and intensity of the behaviour. Collect baseline data on typical behaviours for approximately three to five days, and on less frequent behaviours over a longer period.

The next stage of data collection is to observe and record the student’s behaviour before and after positive behaviour support programming to show progress and monitor change.

14. The remainder of this chapter adapted with permission from Karen Bain and Brenda Sautner, *Behaviour, Observation, Assessment and Teaching Strategies*, 2<sup>nd</sup> ed. (Edmonton, AB: Special Education Council, The Alberta Teachers’ Association, 2007), pp. 29–38.

## Tips for collecting data

- Observe problem behaviour often enough to accurately and clearly describe and document it in a variety of settings or contexts, at various times and with different staff members. If a behaviour occurs constantly, observe and record the times during which the behaviour occurs, as well as the locations and surrounding conditions.
- Specify behaviours in observable and measurable terms that are easily recorded. Staff need to have a common understanding of what the behaviour looks like so that everyone knows when the behaviour occurs. Staff also need to know how to describe influential environmental conditions.
- The type, rigour and method of data collection depends on the nature and severity of the problem and the kind of behaviour being observed.

Following is a suggested process for collecting data.

1. Select a problem behaviour that the student needs to modify or replace. Focus first on the most critical behavioural concerns.
2. Choose a data collection system that is effective and efficient, and one that is appropriate for the nature, extent and/or frequency of the behaviour.
3. Collect the data.
4. Summarize and assess the data.
5. Use this analysis to:
  - identify the function of the behaviour
  - determine desired behaviours and decide which ones take priority
  - select teaching strategies
  - develop an individual behaviour support plan.

Specific methods of collecting data include event recording, interval recording, momentary time sampling, duration recording and ABC recording (described on page 40).

## Event recording

Count the number of times a discrete behaviour happens during an identified time period (e.g., class, day or event). Count by making tally marks on the board, moving items from one pocket to another, or putting marks on a bracelet or tape on a wrist. This approach is not suitable for observing behaviours that occur at a very high rate because the counting process becomes too difficult.

### Example 1

Each time a student shouts out during class, the teacher makes a mark on the board. This method may be suitable when the goal is to decrease callouts and increase hand-raising.

Math ### II	Science III	Social 0	Phys. Ed. 0
Language Arts II	Home Room 0	Lunch Room 0	Library II

### Example 2

A student has a problem with swearing. The teacher keeps a chart like the one below and uses a checkmark to indicate each time this problem behaviour is observed.

Monday

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					

Tuesday

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
✓	✓	✓	✓	✓										

This method simply counts the frequency of a problem behaviour. It does not provide any information about conditions, times or situations.

### Interval recording

Record behaviours as they occur within a set period of time. For example, divide a 10-minute assignment or task into 30-second intervals and note whether the behaviour occurs during each interval.

Or record behaviour that lasts throughout a whole interval. For example, divide a 30-minute period into 20-second intervals and record self-stimulatory behaviour when it occurs during the full 20 seconds.

To collect data using the interval recording method:

- define a specific time period for observation
- divide the observation period into equal intervals that are adequate for observing and recording behaviour reliably
- select a method of recording and note the materials required

- describe the behaviour to be observed in extremely clear terms so recording is consistent across observers.

Try using a matrix that combines the time intervals with the student’s daily timetable to determine behaviour patterns across settings or subject areas.

**Example**

A student often daydreams when math activities are assigned. He just sits, gazing at the ceiling fan and smiling. Indicate whether the behaviour occurs during a 5-minute interval, using a checkmark for Yes and an X for No.

5 minutes ✓	10 minutes ✓	15 minutes ✓	20 minutes ✓
25 minutes x	30 minutes x	35 minutes x	40 minutes ✓

A timer or electronic signaling device such as an egg timer or counting clock can help the observer remember to record during each interval. Interval recording is best done by an objective observer who is not responsible for teaching at the same time, as it requires a high level of vigilance to be valid and reliable.

**Momentary time sampling**

The observer sets up an interval of time and records whether the behaviour is occurring at the specific time the interval ends. This data collection method works for groups of students as well as individuals, and it allows an observer to record more than one behaviour at the same time.

**Example**

A buzzer rings at fixed/regular intervals (e.g., every 5 minutes) or at varying/random intervals (e.g., after 4 minutes, 7 minutes and then 3 minutes). The teacher or observer scans the classroom and records behaviours at that precise time. The teacher may also praise students who are writing quietly during individual seatwork, record a mark by the names of students who are “on task” or use the buzzer ringing as a personal prompt to attend to individual students.

The following chart indicates whether individual students were “on task” at three selected times during a 20-minute creative writing session.

Student’s Name	Writing Interval 1	Writing Interval 2	Writing Interval 3
Karen	✓	✓	✓
Hayley	✗	✗	✓
Myka	✓	✓	✓
Darci	✗	✓	✓
Lorraine	✗	✗	✗

Momentary time sampling can be used effectively to improve the behaviour or performance of a group of students. Note that the measurement must take place several times in order to provide reliable and valid information.

### **Duration recording**

Duration recording indicates the length of time a specific behaviour occurs. Recording starts at the time the individual begins the behaviour and stops when it ends. For example, the observer counts the number of minutes a student actively works at the computer, pays close attention during group discussions, or participates in a gym game or other social activity. Duration recording combined with event recording can be useful as well. For example, a teacher records how many times a student is out of his or her seat, and for how long each time (duration).

Duration recording requires a clock, wristwatch, stopwatch or other timing device. Start timing each time the student begins the target behaviour, and stop timing when the behaviour ends. Duration recording is not a suitable data collection method if the behaviour does not have a clear beginning and end, or if the behaviour is frequent (unless someone other than the teacher does the recording).

### **Example**

A student throws a tantrum when given work she dislikes. The observer starts the timer when the tantrum begins and stops it when it ends.

## Using data collection systems

The following table summarizes the potential uses of recommended data collection systems.

Behaviour	Event Recording	Interval Recording	Momentary Time Sampling	Duration Recording
Off task		✓		✓
Hitting others	✓			
Swearing	✓			
Yelling out	✓	✓		
Spitting	✓			
Self-stimulation		✓		✓
Bothering others	✓	✓		
Behaviour for which the function is unknown			✓	

A data collection system provides baseline information that helps staff to clearly identify the nature, extent and frequency of problem behaviours. Use data collection systems initially to make summary statements about the student's observed problem behaviours and set priorities for more comprehensive observations. Then use the results to develop hypotheses about situations; for example, whether certain reinforcements may be encouraging or maintaining a problem behaviour.

Continually collect behavioural data. Data collected before and after implementing a positive behaviour support plan helps staff to monitor whether the plan to change behaviour has been effective.