Porchlight
Autism Education Series

Data Collection

What is data and why do we collect data?

Data collection is the process of gathering and measuring information in a systematic fashion that enables us to test our hypotheses, answer certain questions and evaluate outcomes. Although data collection is a scientific way of collecting information, it does not have to be intimidating. When you check your child's temperature, you are collecting data, and when you compare this reading with a previous reading, you are analyzing data.

When it comes to human behavior, we collect data through observation – what we see and hear. **Collecting data enables you to objectively assess your child's needs, understand what causes certain types of behavior, ensure consistency between school and home, and create a plan to best support him or her**. It also gives you the information you may need to make a decision about the best education for your child.

Data collection is important for your child's educators and therapists as well, because it allows them to modify curriculum, track progress and recommend the proper types of placements for your child. Having data lets you see patterns in behavior. Typically, children with autism have a number of therapists, educators and caregivers who work with them, and tracking their progress can be difficult without reliable data. Collecting data enables you to see how quickly and how well an intervention is working, or NOT working, and causing a child to have maladaptive behaviors, telling a therapist that they need to change their approach with the child.

How do we collect it?

Collecting data is easy when you know what you are looking for and how to capture the data. One of the most important things to keep in mind is that data is only useful if it is clean and accurate. Before you begin to collect data, you need to know what you are looking for, and clearly define this. Here are some steps you can take to collect good data.

1) **Defining what behavior you are looking for** – Clearly state what behaviors are going to count towards your data. When you are defining a behavior, it is helpful to think about whether another person would be able to observe the behavior you are looking for. As an example, "disruptive behavior" may not mean the same thing to two different people. Instead you could say something like "grabs toys from another child when playing in a group".

2) **Pick a tool to record your data**. There are several tools you can use to record behavior; they include scatter plots, frequency charts, duration charts and ABC data charts as noted below.

3) **Decide when and for how long you will observe the behavior**. You may decide to observe your child at home, in school, at the playground or even in a social setting. You also need to pick a timeframe for observing. If a behavior happens frequently, shorter intervals may work fine, however, it the behavior happens rarely, you may want longer periods of observation.

4) Observe and record behavior. Dedicate time to observation. Observing intermittently while you multi-task, or making a mental note to record the behavior on paper later, may not result in useful or accurate data.

Types of Data Collection Tools

1) **Frequency charts** – These charts are used to record how often a behavior occurs in a certain time period. You can use these for behaviors that happen within a short time frame, such as an hour or so, or within a longer time frame, such as a week or more. Here is an example of a frequency chart. You can use this to record the start time and then the number of times you observe the behavior.

2) **Duration charts** – Duration charts are used to record the amount of time that a person engages in a certain behavior. These charts are most helpful when there is a clear beginning and end to a behavior and it lasts for more than a few seconds. Here is an example of a duration chart. You can use this to record the start and stop time every time the behavior occurs, and then calculate the amount of length of time the behavior occurred for.

3) **Scatter Plots** – Scatter plots are grid charts that are used to observe either single events or a series of events. These charts are very helpful when you are looking for patterns in behavior. They indicate when and how often a behavior occurs. Here is an example of a scatter plot. You can use this to mark an X next to the interval every time the behavior occurs on a specific day.

4) **ABC data charts** – An ABC chart is used to collect data mostly for situations where you would like to change behavior or understand the motivation behind a behavior. The ABC refers to: **Antecedent** – which are the actions, events or circumstances that occur just before a behavior is demonstrated; **Behavior** – The observable actions of the person; and **Consequence** – The response to the behavior. You can use this to record what happens just before and after a behavior, as well as details about the behavior.

How can I use data that I collect?

You can use the data you collect to increase the behaviors you want to see more of, as well as to decrease undesirable behaviors. If you notice a behavior that you would like to see less of, you can collect data to identify if there is something specific that triggers this behavior. You might be surprised to find, for example, that you child always engages in a certain behavior just before lunch, or only at bedtime.

Data can also be used to increase behaviors such as staying in bed, responding to greetings or even sitting at the dinner table. You may be able to collect data to see if certain medications are having an effect on your child. You do this by collecting baseline data prior to starting the medication, and then collecting data while your child is on the medication to see if their behavior has changed.

There are many ways in which data collection can be useful to you. For more information on data collection, speak to your child's therapist.