Practice Leadership Workshops for Behaviour Support Practitioners

Collecting Meaningful Data and Measuring Outcomes

Facilitator: David Wragg

NDS National Disability Services

Acknowledgement

We acknowledge the traditional people of Australia and pay respect to elders past, present, and emerging.

Housekeeping and Disclaimers

- Please step out and attempt to minimise disruption if you need to take a call.
- Feel free to join in and discuss topics, but please depersonalise any information you use.
- The usual conduct around confidentiality of individuals' personal information applies.
- The content of this workshop is designed to be applicable to a wide range of PBS practitioners and professionals.
- This workshop is intended to give participants direction for their own practice, but nobody will be an expert in data collection at the end of the day.

National
Disability
Services

Workshop series

Practice Leadership Workshops for Behaviour Support Practitioners

1) Implementing positive behaviour support
2) Reflective Practice
3) Collecting meaningful data and measuring outcomes
4) Supporting the person (and their support network) to be involved in the development of their own plan.

NDS National Disability Services

About us

Guidestar provides services in

- Positive behaviour support and training for professionals

- Support coordination

- Psychology services

- Organisational and professional support

Outcomes of today's discussions

- Improve our understanding of data as it relates to the capability framework.

- Gather new ideas on how to use data to inform services and report outcomes.

- Discuss quality of life improvements as a performance metric.

- Share successes and barriers regarding data collection

NDS National Disability Services

COVID-19

The content of this program was developed to be an in-person workshop prior to the COVID-19 outbreak.

Given the change of circumstances, it is anticipated that the conversation may include practitioner challenges and ideas to address the current situation.

While no slides have been prepared for COVID-19, please feel free to discuss the topic in the context of current events.

NDS National Disability Services

Positive Behaviour Support

*An **applied science** that uses **educational methods** to expand an individual's **behaviour** repertoire and systems change methods to **redesign an individual's living environment** to first enhance the individual's **quality of life** and, second, to minimise his or her **problem behaviour.***

(Carr et al. 2002, p. 4)

Why do we collect data?
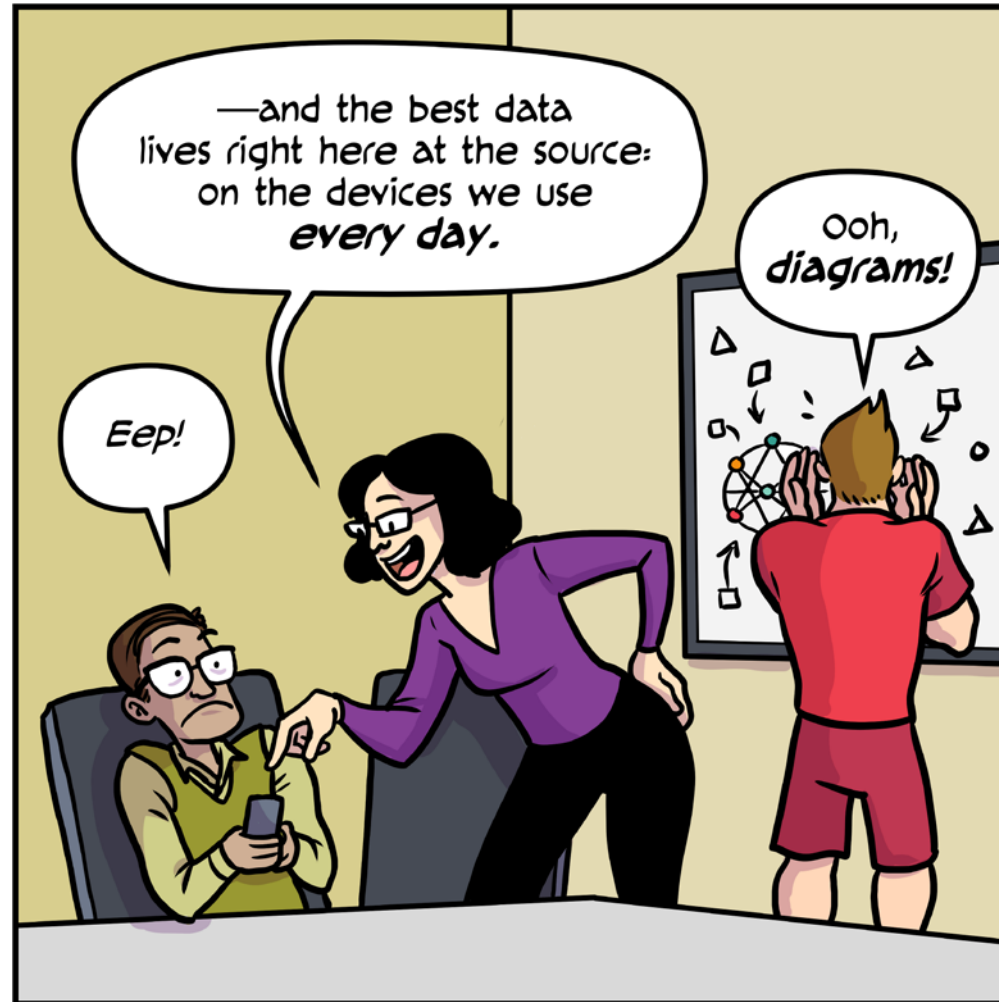
Why do we collect data?

- Understand or describe a situation
- Find correlations between variables
- Test hypotheses
- Measure changes in behaviour and quality of life
- To meet capability framework criteria

Capability Framework and Data

Interim Response
- Evaluate the risk posed by the behaviour to the person (i.e. How frequent or intense is the behaviour? How long does it last?)
- Record and report accurately

Begin by establishing a *baseline* for the behaviour
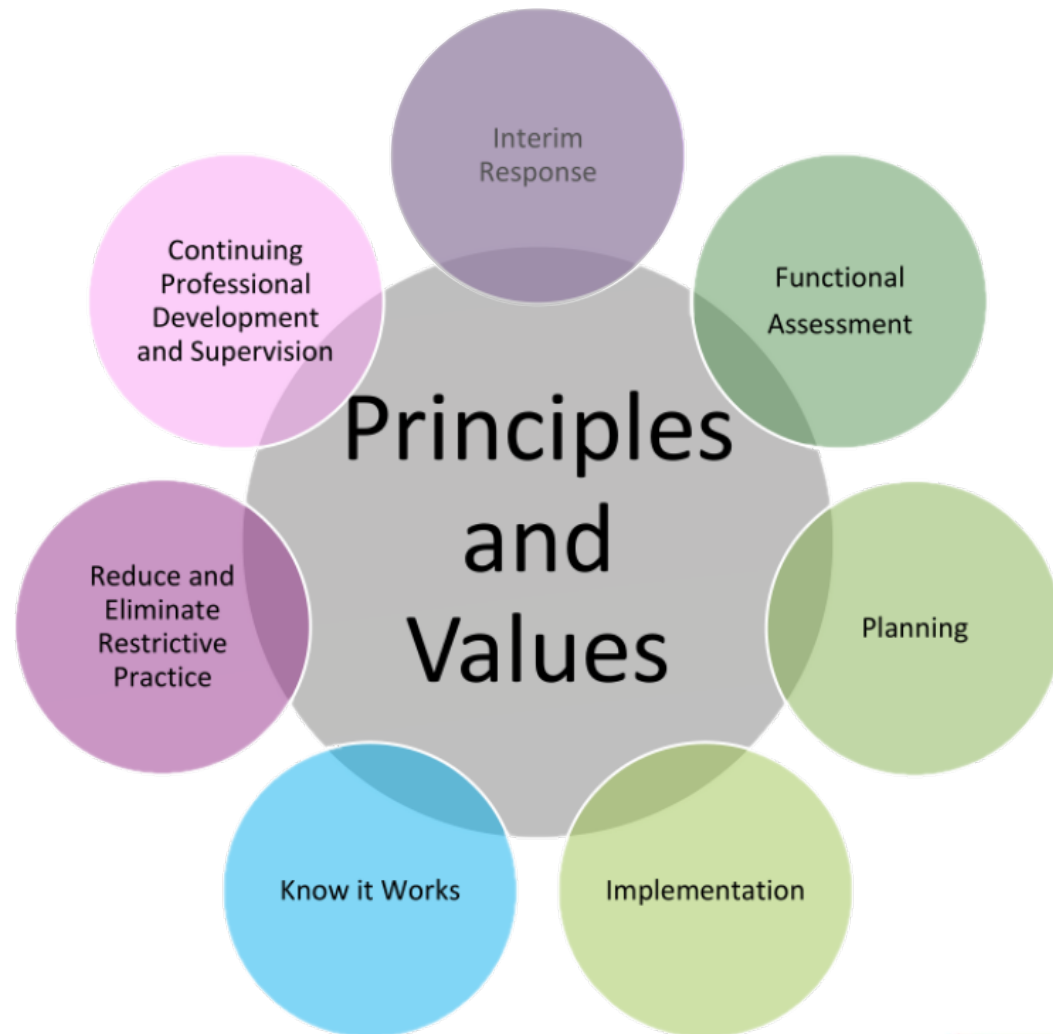
Establishing a baseline

Start with an operational definition:

> *"In an operational definition, a behavior is explicitly or clearly defined such that it is measurable, can be identified by two or more observers, and can be identified across time and in different settings or contexts."* (Bicard & Bicard, 2012, p.12)

We can't begin to measure a behaviour accurately across settings unless we can agree on what is being measured, these concepts are known as *validity* and *reliability*.

Establishing a baseline

By having a clear idea of what we are recording, we can then take data on the:

- Frequency – Counting how often something occurs
- Intensity – Often measured using a Likert scale
- Duration – How long a behaviour occurs

For example:

Self-injury presents approximately 4 times per week with an average duration of 12 minutes with a range of 2 minutes to 33 minutes. The impact of this behaviour ranges from red marks on the arm to injuries requiring attention from paramedics. On average paramedics are called every 9 months to attend to injuries resulting from self-injury.

Likert scales as intensity measurements

- A Likert Scale can be used to rank behaviour and provide an intensity scale.

- Data collectors may rate a behaviour differently if no guidelines are given.

- Creating a rubric can be useful to increase reliability.

Example:

Self Injury Rubric

1) Red marks on the skin.
2) Results in minor abrasion/laceration/bruising
3) Results in abrasion/laceration that requires application of a plaster or bandage
4) Results in significant bleeding
5) Presence of emergency services or professional medical attention

Interim Response & Data

Establishing a baseline not only helps as a basis of comparison.

The process can help to assess risk, prioritise goals, and understand how the behaviours of concern are impacting on quality of life.

Capability Framework and Data

Functional Assessment
- Understand the importance of obtaining baseline measures of behaviours of concern, quality of life, and use of restrictive practices
- Understand the importance of data-driven decision making
- Systems to collect data from a variety of sources
- Identify antecedents and maintaining consequences

Using data to conduct a functional assessment

- What data or tools can we use to assist in conducting a functional assessment?
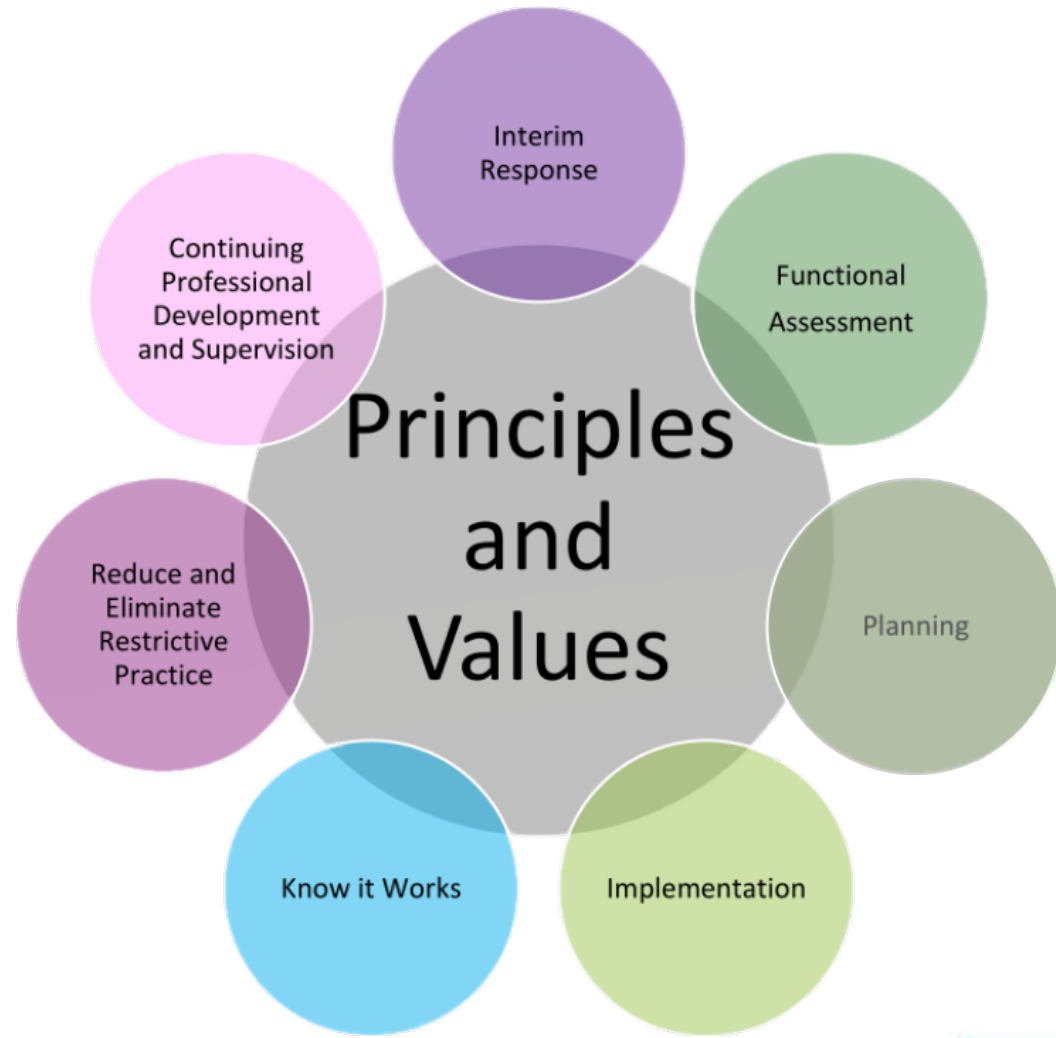- Having detailed and frequent data can help to establish a function.

Using data to conduct a functional assessment

- What happens if we don't have data? What can we do?

  - Discuss or conduct observations with stakeholders
  - Conduct a file review of session notes/IRs/health notes/etc.
  - Use assessment tools such as the Questions about behavioural function, Behaviour Problem Inventory, Functional Assessment Interview, etc.
  - NDIS Compendium of Resources can be found at: https://www.ndiscommission.gov.au/document/1456

Capability Framework and Data

Planning:
- Use data to inform a theoretical and ethically sound behaviour support plan
- Develop strategies to improve a person's quality of life.
- Develop strategies to increase the person's skills and communication
- Develop data collection systems that are objective, understandable, and useable by the key people.
- Develop a behaviour support plan that is supported by data that measures how accurately it is implemented.

Interim Response

Functional Assessment

Planning

Implementation

Know it Works

Reduce and Eliminate Restrictive Practice

Continuing Professional Development and Supervision

Principles and Values

Operationalising Person Centred Goals

Person-Centred Planning

"Person-centred planning begins when people decide to listen carefully, and in ways that can strengthen the voice of people who have been, or are at risk, of being silenced" (O'Brien, as cited in Sanderson, p. 304)

Key features of a person-centred plan:

- The **person is at the centre,** with the plan emphasising their voice.

- **Families and friends are partners** in planning.

- **Reflects a person's wishes, aspirations and capacities,** rather than needs and deficits.

- **Includes life goals, not goals centred around services.** These should reflect what's possible, not just be limited to what's available or what services can manage to achieve.

- **Includes a shared commitment to action** and involves ongoing listening and further actions to help a person achieve what they want for their life.

National Disability Services

Operationalising Person Centred Goals

Often NDIS goals are person centred, achievable, relevant, but vague.
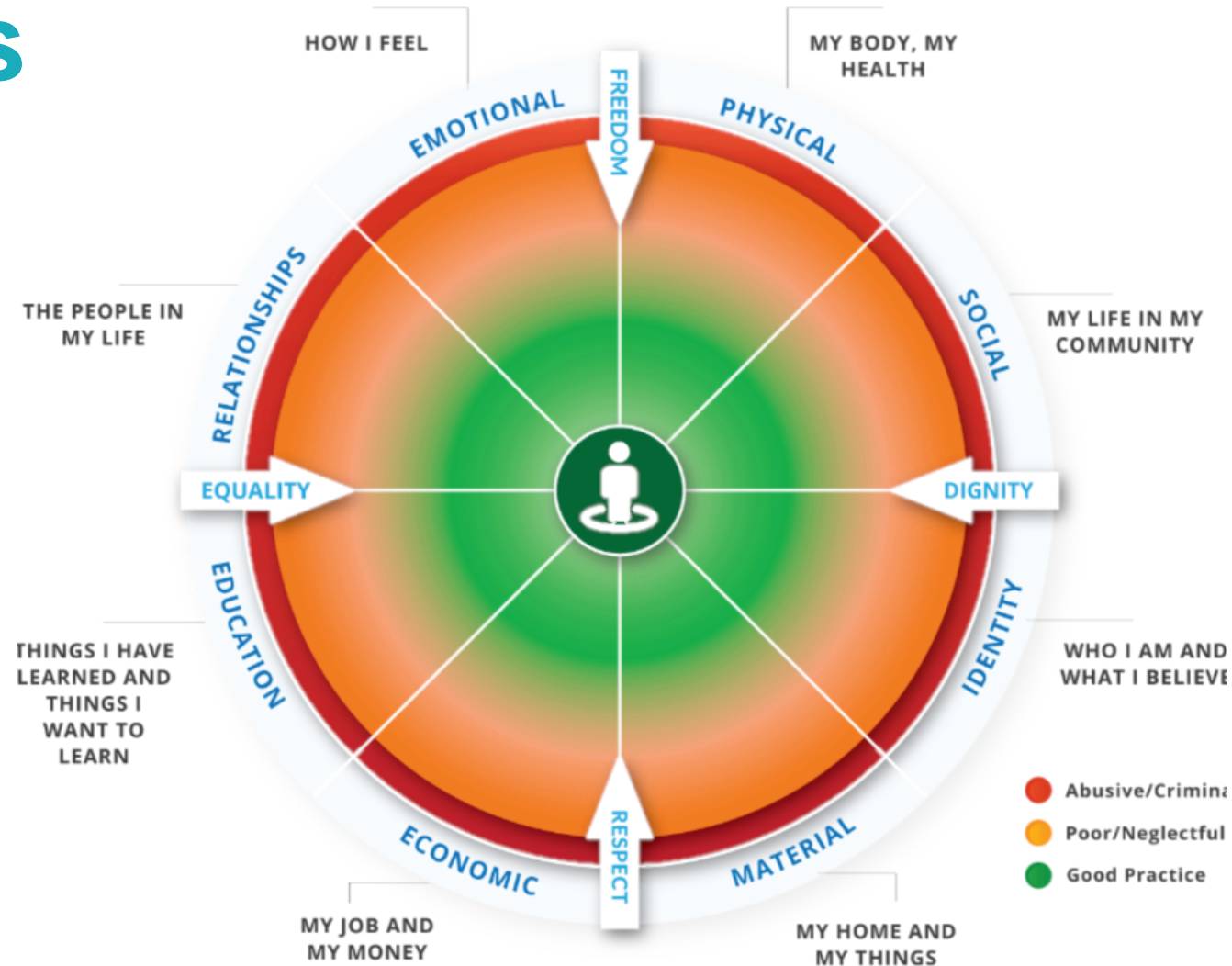
"Mark wants support to access the community, learn new skills, and learn to better manage his emotions".

Operationalising Person Centred Goals

"Mark wants support to access the community, learn new skills, and learn to better manage his emotions"

- *"Mark went out every week"* vs. "*In February Mark accessed the community 14 times, 7 of these visits were to the Boar's Head Hotel for* Morning Melodies. *The average duration of community access shifts was 175 minutes"*.

- What other things could we record?

- What questions can we ask about the accuracy of the measurement?

Operationalising Person Centred Goals

HOW I FEEL

MY BODY, MY HEALTH

EMOTIONAL

PHYSICAL

FREEDOM

RELATIONSHIPS

THE PEOPLE IN MY LIFE

SOCIAL

MY LIFE IN MY COMMUNITY

EQUALITY

DIGNITY

EDUCATION

IDENTITY

THINGS I HAVE LEARNED AND THINGS I WANT TO LEARN

WHO I AM AND WHAT I BELIEVE

ECONOMIC

RESPECT

MATERIAL

MY JOB AND MY MONEY

MY HOME AND MY THINGS

Abusive/Criminal
Poor/Neglectful
Good Practice

NDS National Disability Services

Operationalising Person Centred Goals

- Mood and wellbeing scales (QOLI, Depression inventories, etc.)
- Health outcomes (Physical stats, number of days in hospital, length of hospital stays)
- Community life (Number of friends, days in the community, membership in community groups)
- Identity – (Attendance at religious/cultural events, time spent with people of the same background, number of friends who speak the same LOTE, etc.)
- Material – (Adequate accom, equipment in good repair, have items of importance to them)
- Economic – (Person is working as much as they'd like, enough money to meet needs/achieve goals, accounts not in arrears)
- Education – (Attendance/Completion of courses, marks in classes, hours for L's/P's)
- Relationships – (Friendships, Romance, Social skills education)

Operationalising Person Centred Goals

In data analysis and behaviour support there is a tendency to focus on behaviours of concern.

This can mean a practitioner's success, or plan's efficacy, may only be measured by a reduction in the frequency, duration, and/or intensity of behaviours of concern.

This can lead to someone who is "easy" or docile being one of the 'success stories'.

Capability Framework and Data

Implementation

- Identify appropriate methods of feedback for those implementing a behaviour support plan
- Support those implementing a behaviour support plan to use the recommended data collection systems
- Support implementation across different environments and contexts
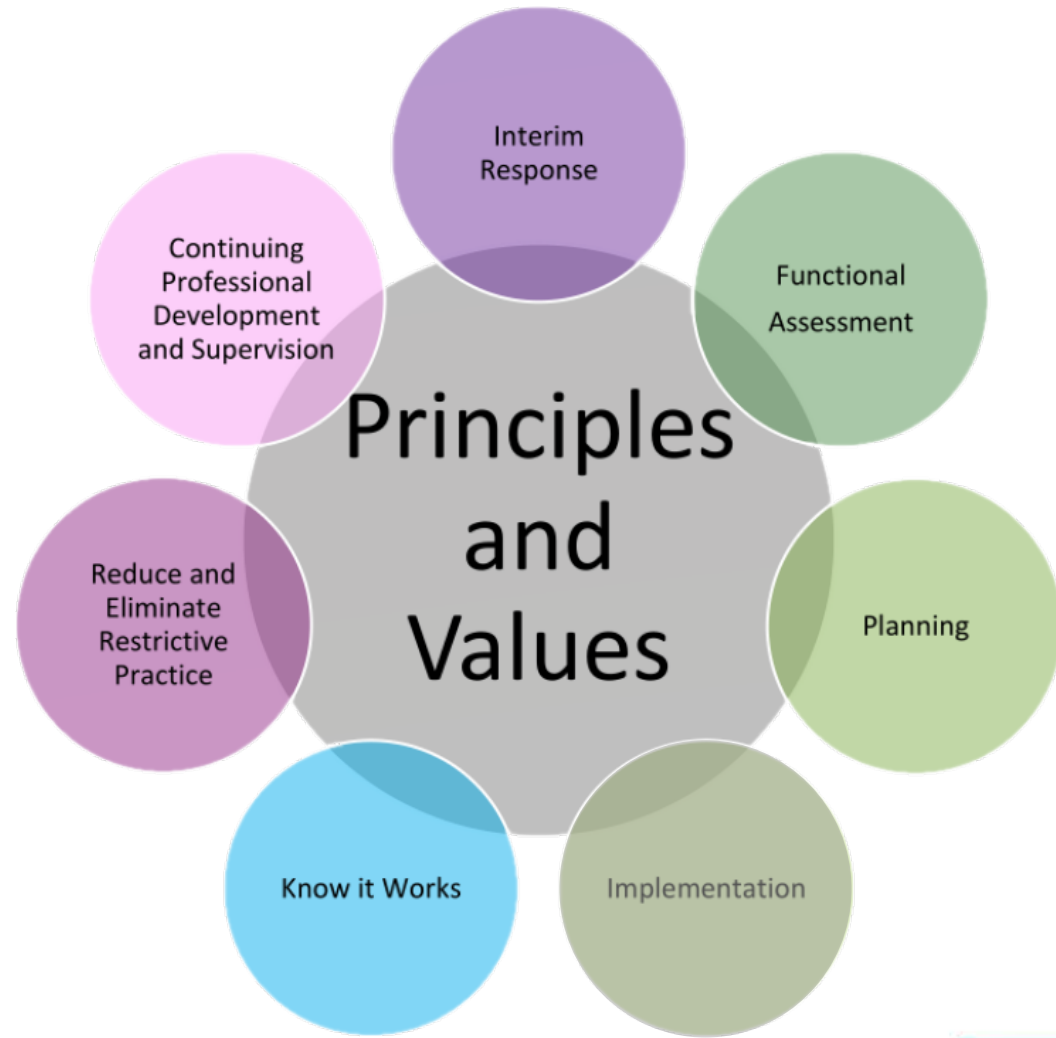
Implementation

Individuals often have different providers which can make it hard to make an apples-to-apples comparison.

Having inconsistent data collection can also introduce a bias.

"Carrie attends Elder Anne day program who requested behaviour support due to the fact that they are submitting upwards of 6 incident reports per day. While conducting initial discussions with the house supervisor at 4 Yavin Road (her accom provider), their data recordings indicate behaviour presents at a rate of roughly 1.5 times per day but no incident reports have been submitted in 6 months"
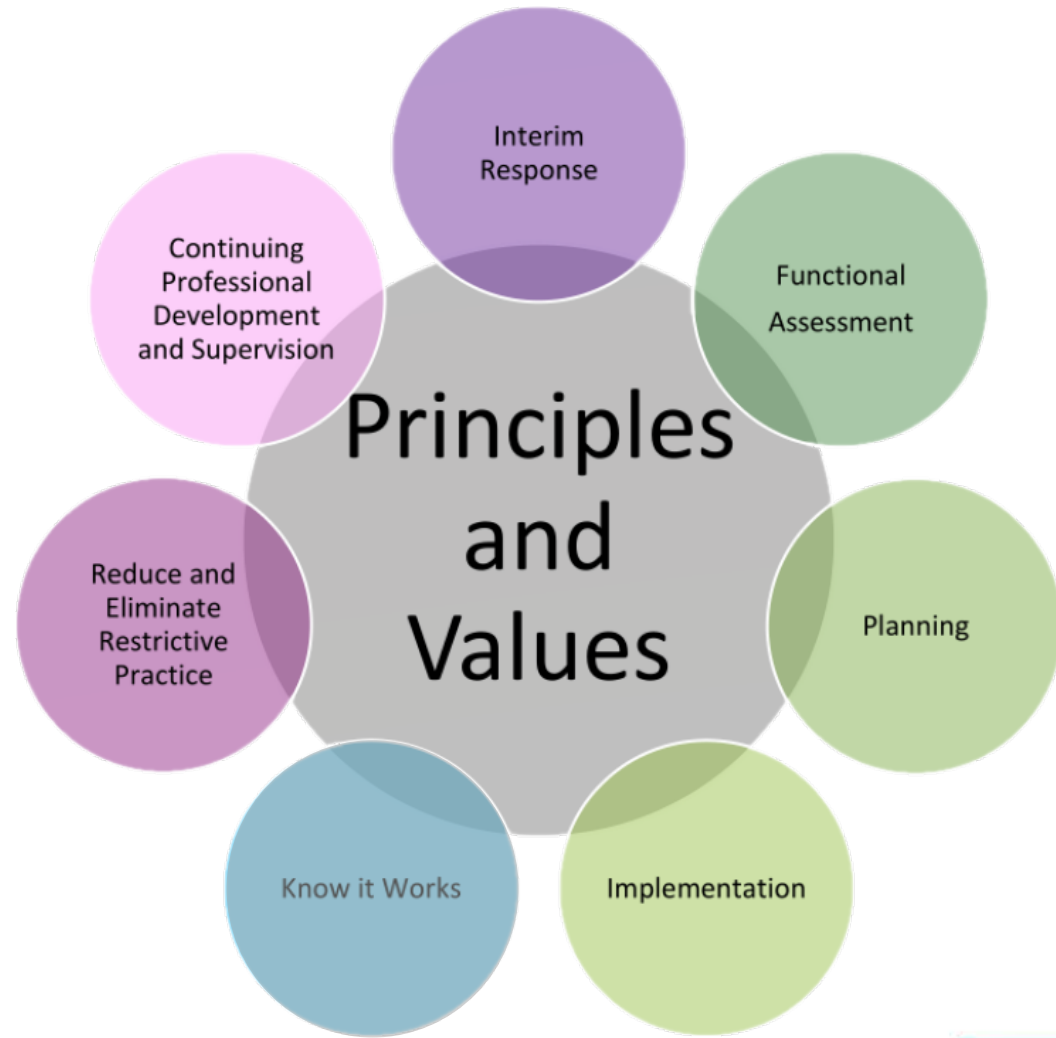
Reliability and Validity

- Reliability: "Reliability in functional assessment refers to agreement among observers viewing the same behavior at the same time regarding its occurrence or non-occurrence." (Gresham, Watson & Skinner, 2001, p.169)

- Validity: The extent to which a measure relates to the information being sought. (Price, Jhangiani R., & Chiang, 2015)

National Disability Services

Capability Framework and Data

Know it works

- Use data to monitor implementation of behaviour support plans in a whole-of-life context
- Track progress of a behaviour support plan using indicators of effectiveness
- Understand systematic monitoring and evaluation
- Have robust and effective ways to measure and evaluate outcomes
- Use data to explain the reason(s) behind a behaviour support plan's effectiveness
- Apply and interpret measures that capture an increase in behaviours or use of RPs, or decrease in QoL

Principles and Values

- Interim Response
- Functional Assessment
- Planning
- Implementation
- Know it Works
- Reduce and Eliminate Restrictive Practice
- Continuing Professional Development and Supervision

Are we achieving the goals we have set?

To determine this, it helps to take data continuously; this allows us to determine if there has been a reduction in behaviour or if reductions have been maintained.

Often, we're not recording the data we want- times when *no* behaviour is occurring!

Are we achieving the goals we have set?

What sort of data can we collect to see to assess the effectiveness in interventions?

- Frequency of behaviour

- Intensity of behaviour

- Duration of behaviour (where applicable)

- How often is someone using replacement behaviour (opportunity data)

- Quality of life measures (e.g. Quality of life inventory, pleasant events Schedule, Health of the nation outcomes survey, frequency of quality of life increasing events, duration of quality of life increasing events, health indicators, etc.)

- Evidence of increased skill (Task analyses are particularly useful here)

Capability Framework and Data

Reduce and Eliminate restrictive practices

- Understand that restrictive practices must be justified and are an option of last resort
- Restrictive practices can only occur when a behaviour support plan is in place
- Ensure behaviour support plan is outcomes-focussed, person-centred, and strategies proactively address a person's needs.

Data collection practices and restrictive practices

- What sort of information might a medical practitioner need to reduce Restrictive Practices?

- How can we use data to plan out and reduce restrictive practices?

- What sort of data collection or analysis do we use in our own practice to plan a reduction in Restrictive Practices?

NDS National Disability Services
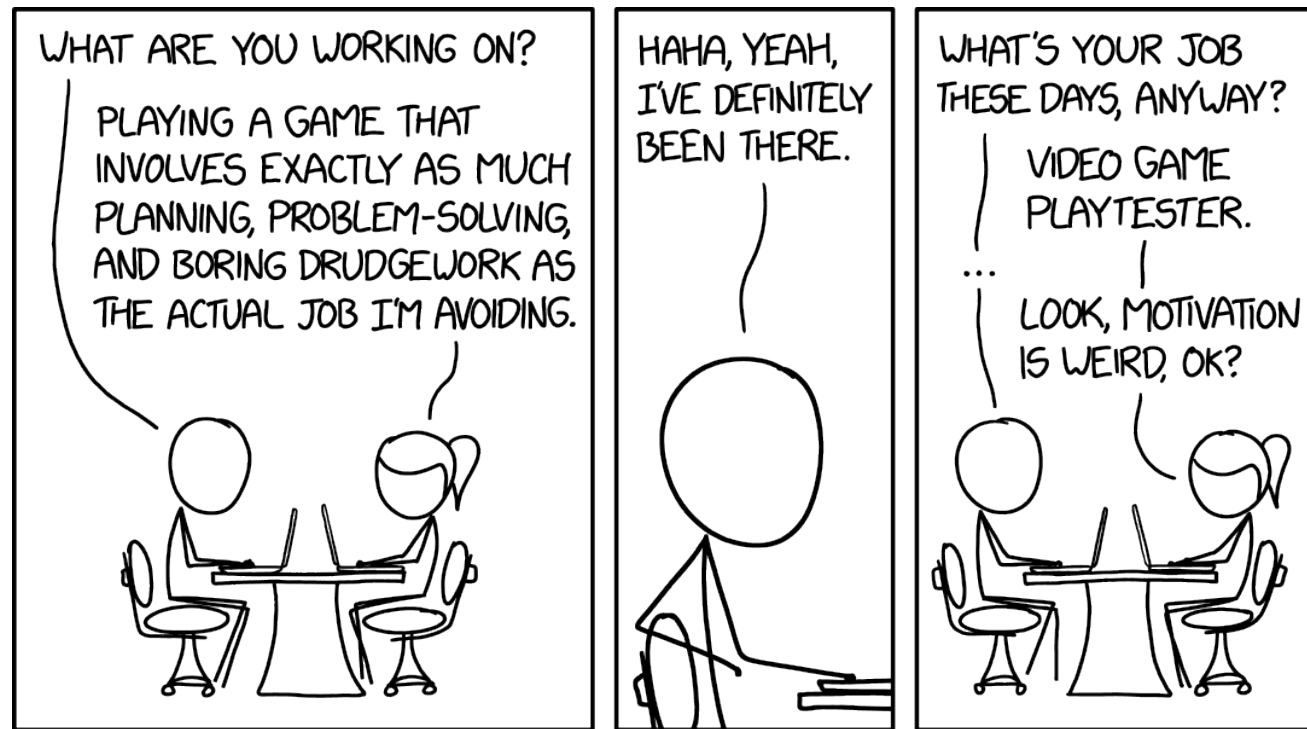
Capability Framework and Data

Continuing professional development and supervision

- Conduct regular professional development plans
- Participate in supervision
- Evaluate supervision

When investigating new techniques or modalities, consider the concepts of *validity* and *reliability*.

Principles and Values

- Interim Response
- Functional Assessment
- Planning
- Implementation
- Know it Works
- Reduce and Eliminate Restrictive Practice
- Continuing Professional Development and Supervision

NDS National Disability Services

Barriers To Data Collection

Discussion

- How does data collection usually go for us?
- What is the quality of the data we receive? Is it usable?
- What do we currently do to facilitate data collection?
- What feedback do we get from staff when we ask for data?
  - Not enough time
  - Too confusing
  - Already collecting data
  - What's the point?

Considerations when collecting data

- Following a person around to collect data can be dehumanising or embarrassing for a person- particularly in the community.

- Contriving situations to collect data can introduce bias or reduce social or ecological validity.

How do we ethically collect data?

Considerations when collecting data

What can we do?

- Discuss data collection with the person and/or stakeholders and get guidance for how they would like this to occur.
- Surreptitiously take data in the community- don't follow the person around with a pen/clipboard and instead use a small slip of paper, write data on your hand, use a behaviour tracking app.
- Limit how much data is taken at once, and identify the most relevant data
  - For example – At the grocery store track the use of social skills or shopping skills, not both
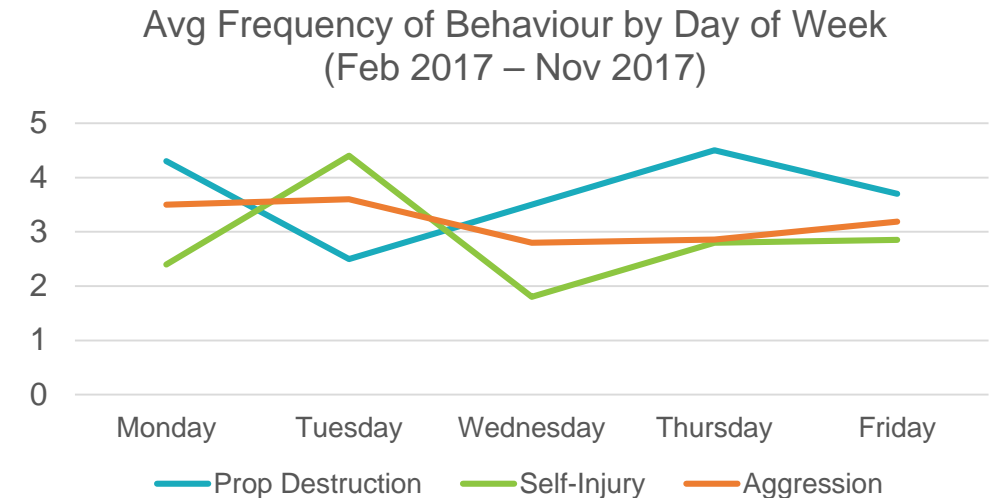- Beware of introducing bias when choosing when/which type of data to collect.

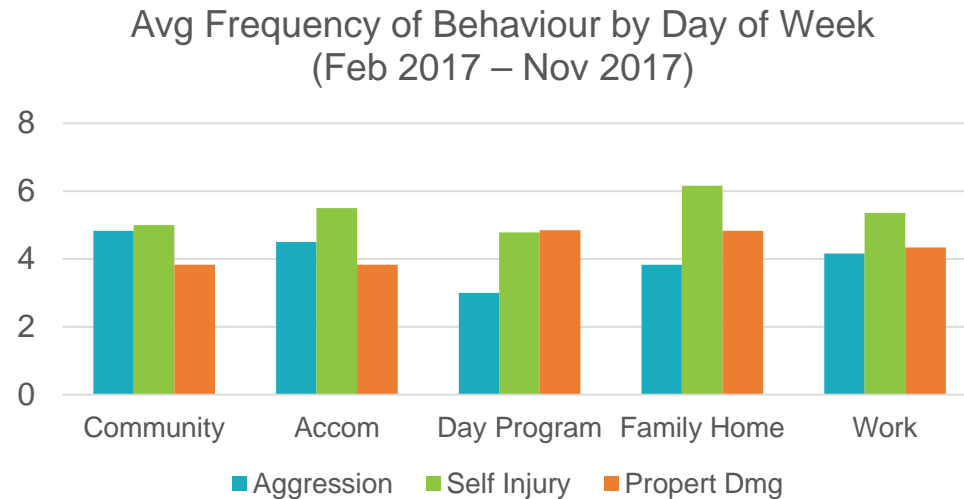# Reporting Data

https://www.xkcd.com/688/
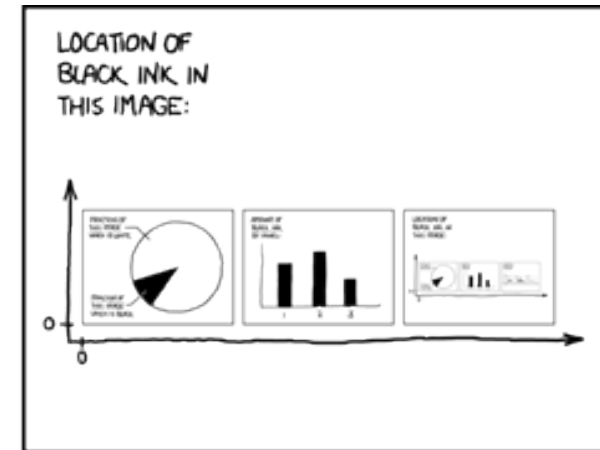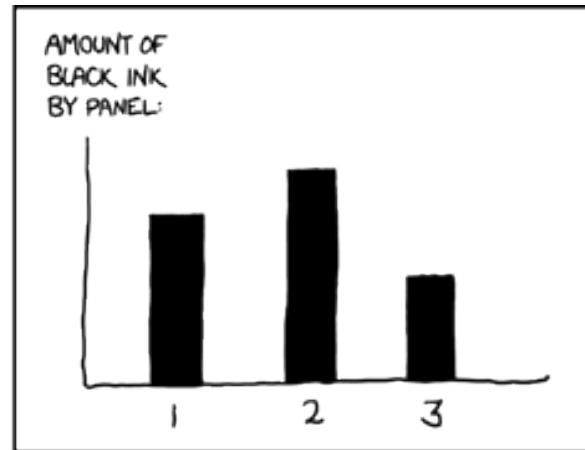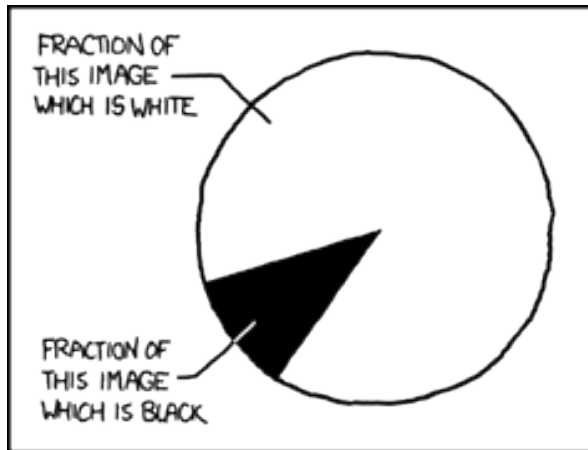
Visualizing Data – Line Graphs

- Useful for identifying relationships between multiple variables
- Useful for identifying trends across times
- Can show a linear cause and effect
- Independent Variable goes on x axis
- Dependent Variable goes on y axis
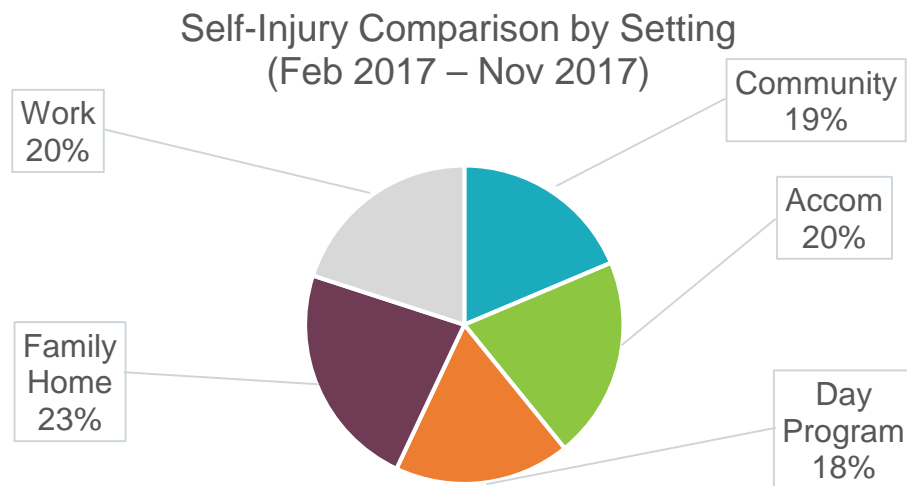- Generally used to show linear/chronological relationships

Avg Frequency of Behaviour by Day of Week
(Feb 2017 – Nov 2017)

— Prop Destruction — Self-Injury — Aggression

Visualizing Data – Bar Charts

Avg Frequency of Behaviour by Day of Week
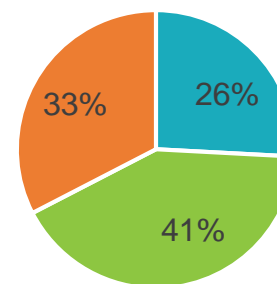(Feb 2017 – Nov 2017)

- Compares similar data across categories
- Easily identify extreme values (or lack thereof)
- Identify relationships between variables in specific scenarios

Visualizing Data – Pie Charts

**Self-Injury Comparison by Setting
(Feb 2017 – Nov 2017)**

Work
20%

Community
19%

Accom
20%

Family
Home
23%

Day
Program
18%

**Behaviour Ratios in Family Home
(Feb 2017 – Nov 2017)**

33%

26%

41%

■ Aggression ■ Self Injury ■ Propert Dmg

- Useful for looking at one variable across multiple categories
- Show how categories contribute to a whole
- Identify relative strengths or weaknesses

NDS National Disability Services

Tables

- Adds credibility to analysis by providing raw data
- Succinct way to display complex or large data sets
- Breaks up "wall of text" in reports
- Easy to reference in your body
- Can combine bold/italics/underline to emphasize certain values

Average frequency per day Feb 2017 – Nov 2017		
	Aggression	Self Injury	Property Dmg
Community	4.83	5	3.8
Accom	4.5	5.5	3.8
Day Program	3	4.7	4.9
Family Home	3.8	**6.2**	4.8
Work	4.2	5.3	4.3

Tips for discussing data

Where possible, include a brief intro for each data set discussing:

- What data was collected
- How it was collected
- What periods data was collected (e.g. from Dec 2 until Dec 23)
- Concerns about data collection
  - Only collected in one setting, period of collection was 6 months, but an entire month missing, etc.
  - Conscious/unconscious biases ("Narrative data indicates staff are recording thrown objects as both aggression and property destruction")

Tips for discussing data

- Where necessary, identify your analysis methods ("The median value of December mood rankings indicates")

- Tables and Charts will be numbered, making it easy to refer back to them in body text (e.g. Figure 2 shows…) and ensures you don't have to rewrite what's in the figure/table

- As with the rest of the document, avoid speaking in the first person and act as though the data and figures are people speaking to you (e.g. "Table 1 shows…", "As shown in figure 3", "When comparing averages…")

Thank you!

If you have any further queries, or would like to discuss other training available, you are welcome to contact me at:

David.Wragg@guidestarlife.com.au

0456 000 364

Tools, templates and resources

Information on defining behaviour and collecting data
- https://accessibleaba.com/blog/data-collection-methods
- https://accessibleaba.com/blog/define-behavior

Data Collection Sheets
- https://www.earlywood.org/Page/556
- https://www.autismclassroomresources.com/data-collection-in-autism-taking-data/
- https://www.pbisworld.com/data-tracking/

Integrity and reliability as quality indicators
- https://youtu.be/XYtsrJg1d6g

Data collection types explained
- https://youtu.be/7QquFBD7AM4

Information on Task Analysis:
- https://youtu.be/o3PveHDRuM8
- https://www.iidc.indiana.edu/irca/articles/applied-behavior-analysis.html

Tools, templates and resources

Google docs data tracking
- https://youtu.be/gcJRVhGrbAY

Music based discrete trial training
- https://youtu.be/OIsiC0Cf95I
- https://youtu.be/f7R3Icrut3k
- https://youtu.be/lL7vMsHHTPg

Podcast on where to deliver services
- https://soundcloud.com/allautismtalk/where-can-autism-services-take-place-and-what-are-the-ideal-environments-dr-hanna-rue#t=6:15

Tools, templates and resources

Behaviour tracking apps (Android):
- ABC tracker
  (https://play.google.com/store/apps/details?id=com.gmail.interfer0.abctracker&hl=en)
- Behavior Observation Made Easy
  (https://play.google.com/store/apps/details?id=com.behaviorobservation&hl=en)
- Behavior tracker
  (https://play.google.com/store/apps/details?id=uk.co.brooklynsoftware.behaviour&hl=en)

Behaviour tracking apps (Apple)
- Behavior tracker pro (https://www.behaviortrackerpro.com/)
- ABC Data Suite (http://cbtaonline.com/drupal/products)
- Behaviour Observation Made Easy (https://www.behaviormadeeasy.com/)

References

- Bicard, S. C, Bicard, D. F., & the IRIS Center. (2012). *Defining behavior*. Retrieved from https://iris.peabody.vanderbilt.edu/wp-content/uploads/2013/05/ICS-015.pdf

- Bhat, A. (n.d). Ordinal data: definition, analysis and examples. Retrieved from https://www.questionpro.com/blog/ordinal-data/

- Carr, E. G., Dunlap, G., Horner, R. H., Koegel, R. L.,…Fox, L. (2002). Positive behavior support: Evolution of an applied science. *Journal of Positive Behavior Interventions, 4*(1), 4. Retrieved from http://ezproxy.slv.vic.gov.au/login?url=https://search-proquest-com.ezproxy.slv.vic.gov.au/docview/218766782?accountid=13905

- Carter, S. L., & Wheeler, J. J. (2019). *The Social Validity Manual: Subjective Evaluation of Interventions.* (2nd ed.). London, UK: Elsevier Inc. Retrieved from https://ebookcentral.proquest.com/lib/vu/reader.action?docID=5788832&ppg=23

- Corporate Finance Institute. (n.d.). Nominal Data. Retrieved from https://corporatefinanceinstitute.com/resources/knowledge/other/nominal-data/

- Field, A. (2013). *Discovering Statistics Using IBM SPSS Statistics.* (4th ed.) [Kindle] Retrieved from Amazon.com.au.

- Formplus (2013). What is Interval Data? + [Examples, Variables & Analysis]. Retrieved from https://www.formpl.us/blog/interval-data

National Disability Services

References

- Grandin, Temple (n.d.) Evaluating the Effects of Mediation. Retrieved from https://iidcweb.sitehost.iu.edu/irca/articles/evaluating-the-effects-of-medication on 09/02/2020

- Great Schools Partnership. (n.d.). The Glossary of Education Reform. Retrieved from https://www.edglossary.org/aggregate-data/

- Gresham, F., Watson, T. S., & Skinner, C. H. (2001). Functional behavioral assessment: Principles, procedures, and future directions. *School Psychology Review, 30,* 156-172. Retrieved from https://search-proquest-com.ezproxy.slv.vic.gov.au/docview/219646478/fulltextPDF/A04B588580AE484APQ/1?accountid=13905

- Hanna, D. & Dempster, M. (2012). *Psychology Statistics for Dummies*. West Sussex, England. Retrieved from https://ebookcentral.proquest.com/lib/vu/reader.action?docID=996075&ppg=68

- Kazdin A. E. (1977). Artifact Bias and Complexity of Assessment: The ABCs of Reliability. *Journal of Applied Behavior Analysis, 10*(1), 141-150. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1311161/pdf/jaba00112-0143.pdf

- Klipfolio. (n.d.). What is Data Visualization? Retrieved from https://www.klipfolio.com/resources/articles/what-is-data-visualization

- Lerman, D. C., Tetreault, A., Hovanetz, A., Bellaci, E., Miller, J. Karp H. ,…Toupard A. (2010). Applying Signal-detection theory to the study of observer accuracy and bias in behavioral assessment. *Journal of Applied Behavioral Analysis, 43*(2), 195-213. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2884345/pdf/jaba-43-02-195.pdf

References

- Lumen. (n.d.). Introduction to Statistics: frequency, frequency tables and levels of measurement. Retrieved from https://courses.lumenlearning.com/introstats1/chapter/frequency-frequency-tables-and-levels-of-measurement/

- Price, Paul C., Jhangiani R., & Chiang, I.A. (2015) Research Methods in Psychology retrieved on 07/02/2020 from https://opentextbc.ca/researchmethods/chapter/reliability-and-validity-of-measurement/

- Repp, A. C., Nieminen, G. S., Olinger, E., & Brusca, R. (1988). Direct observation: Factors affecting the accuracy of observers. *Exceptional Children, 55*, 29–36. Retrieved from https://eds-a-ebscohost-com.wallaby.vu.edu.au:4433/eds/pdfviewer/pdfviewer?vid=3&sid=a490811f-5e4b-49a8-b42a-96ecd03eee2a%40sdc-v-sessmgr03

- Trochim, William M.K. (2020) Research Methods Knowledge Base retrieved from https://socialresearchmethods.net/kb/levels-of-measurement/ on 07/02/20

- Shriver, M. D., Anderson, C. M., & Proctor, B. (2001). Evaluating the Validity of Functional Behaviour Assessment. *School Psychology Review, 30* (2), 180-192. Retrieved from https://eds-b-ebscohost-com.wallaby.vu.edu.au:4433/eds/pdfviewer/pdfviewer?vid=2&sid=50b5b6e2-58b2-408b-b3c9-a8413e08ec3a%40pdc-v-sessmgr04

- Weiss, Mary & DelPizzo-Cheng, Eliza & LaRue, Robert & Sloman, Kimberly. (2010). ABA and PBS: The Dangers in Creating Artificial Dichotomies in Behavioral Intervention. *The Behavior Analyst Today*. 10. 428-439. 10.1037/h0100681. Retrieved from https://psycnet.apa.org/fulltext/2010-14709-007.pdf on 09/02/2020

- Wolfe, P.S., Condo, B., & Hardaway, E. (2009). Sociosexuality Education for Persons with Autism Spectrum Disorder Using Principles of Applied Behaviour Analysis. *Teaching Exceptional Children, 42* (1), 50-61. Retrieved from https://eds-b-ebscohost-com.wallaby.vu.edu.au:4433/eds/pdfviewer/pdfviewer?vid=1&sid=1af78fbf-ac5a-497b-8953-35cd77ae08b8%40pdc-v-sessmgr01

References

- Wolf, M. M. (1978). Social validity: The case for subjective measurement or how applied behavior analysis is finding its heart. Journal of Applied Behavior Analysis, 11 (2), 203-214. Doi: https://doi-org.wallaby.vu.edu.au:4433/10.1901/jaba.1978.11-203

- Wright, D. B., Cafferata, G., Keller, D., & Saren, D. (2013). The BIP Desk Reference: A Teacher and Behavior Intervention Team's Guide to Developing and Evaluating Behavior Intervention Plans. Positive Environments, Network of Trainers, CA. Retrieved from http://www.pent.ca.gov/dsk/BIPdeskreference2013.pdf

- Zarkowska, E., & Clements, J. (1994). *Problem behavior and People with Severe Learning Disabilities: The STAR Approach* (2nd ed.). London, UK: Chapman & Hall. DOI 10.1007/978-1-4899-7150-0

National Disability Services