Busy Analytical Bee

NEWSLETTER July

Welcome to the July edition. In this edition I reviewed chaining and task analysis and the research using these procedures. The career of Bridget Taylor is celebrated, and there are events and a study tip to check out. I break down role play (doctors) activity into possible targets, and more! Have a great month!

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CHAINING AND TASK ANALYSIS

Teaching a series of responses in a chain can be essential to support people obtain a specific goal or achieve increased independency. Ensuring that each behaviour becomes chained together in a sequence, so that end goal can be achieved can take direct teaching. This can be done by breaking down a particular task (producing a *Task Analysis*), and this can be done for a variety of different tasks, e.g., self-help skills, play skills, social interactions and exercise. A task Analysis "involves breaking a complex skill into smaller, teachable units, the product of which is a series of sequentially ordered steps or tasks" Cooper, Heron, Heward (2007). For the example of making a sandwich, the chain could look something like this:

1. Get bread from bread bin
2. Take slice out of bag
3. Open butter and spread on slice
4. Open ham and remove one slice
5. Place on bread and put bread together

Depending on the learner or the target skill, the individual behaviours may need to be more or less specific. The best way to develop a task Analysis, is to complete the task yourself or watch someone complete the task and make a note of the individual steps taken.

These are then taught by chaining the responses together, using backwards chaining, forwards chaining or total task. Forward chaining involves teaching the first step, until the learner masters the first step, then the second step is taught, and so on. All the steps that are not currently being targeted are fully prompted. Cooper, Heron, Heward (2007) state that with "forward chaining, the behaviours identified in the task analysis are taught in their naturally occurring order". With backwards chaining, all responses in the chian are completed by the trainer and then the learner is taught the final step. When the final step is mastered the final two steps are taught. This continues until all steps are mastered. Total task is when the whole chain is completed by the learner and prompts are given on steps that require a prompt, and the prompt is faded across teaching opportunities until all steps are mastered.

Pic from: https://flic.kr/p/9kqpFR

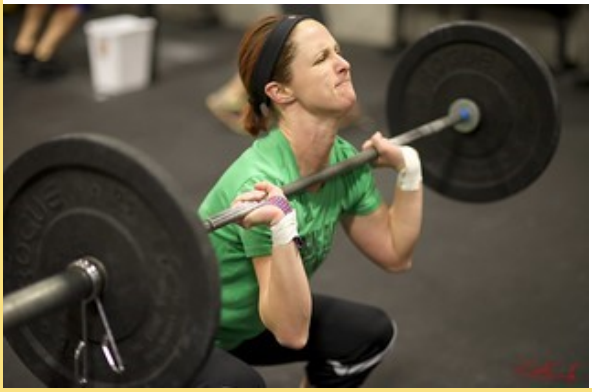
This procedure is often used to teach self-help skills to increase independence in these tasks, although this procedure can be applied to a variety of skills. For example, researchers have investigated the application of chaining in supporting young females being more independent in their own feminine hygiene, related to menstruation (Veazey et al, 2016). This is of important significance to this population. The researchers used total task chaining to reach mastery on this chain. With one participant they initially used forward chaining, but changed to total task. This participant completed between 0-30% of the steps during baseline, 70-90% during forward chaining and then 100% when total task was used. The other participant completed 90% of the steps independently at follow-up.

Chaining was also used to support adults become more

independent with internet skills (Jerome et al, 2007). Using backwards chaining and errorless teaching to teach three adults with developmental disabilities to access a music website and a game website. Preteaching the adults completed 4 or less steps during baseline. Following teaching all participants completed all steps independently, excluding Mark who didn't achieve 100% on only two sessions, otherwise 100% was achieved.

Another example of the efficacy of chaining as a teaching procedure is research conduced by Moore & Quintero (2019). They investigated using chaining to improve the accuracy of participants using Olympic weightlifting movements. These movements are now regularly incorporated into exercise classes (e.g., cross fit) and if these movements are not executed accurately the person puts themselves at risk of injury. Moore & Quintero (2019) broke down two movements (Snatch and Clean) and taught these through chaining. They compared FC and BC so randomly assigned these procedures to each movement across participants. They found that all the participants acquired mastery of the movements with forward chaining. For one participant (Lee) they were able to complete the movements with 1% and 3% accuracy for the snatch and clean respectively, then 64% for the clean when using FC, but only 23% for the snatch using BC. When the snatch was taught using FC, it reached 91% accuracy in the follow up and follow up for the clean move was 95% for Lee.

Generally researchers have not been able to show that one method of chaining is more effective than another. It seems that each method is more effective depending on the skill and the learner. Moore & Quintero state that "unique tasks may lend themselves to either forward or backward chaining". When acquisition is slow, changing the chaining approach may be a consideration. If you want support developing a Task Analysis, or are struggling to teach a skill that involves several smaller responses to be taught in sequence, then speak to a Behaviour Analyst for support with this. Also, check out the Busy Analytical Bee blog post about Task Analysis for more information.



From: https://flic.kr/p/e8c2oU

Cooper, J. O., Heron, T. E., & Heward, W. L. (2007). Applied Behaviour Analysis (2nd ed.) New Jersey: Pearson Education, Inc.

Jerome, J. Frantino, E. P., & Sturmey, P. (2007). The effects of errorless learning and backward chaining on the acquisition of internet skills in adults with developmental disabilities, *Journal of Applied Behavior Analysis*, **40**, 185-189.

Moore, J. W. & Quintero, L. M. (2019) Comparing forward and backward chaining in teaching Olympic weightlifting, *Journal of Applied Behavior Analysis*, **52,** 50-59.

Veazey, S. E., Valention, A. L., Low, A. I., McElroy, A. R., LeBlanc, L. A. (2016) Teaching Feminine Hygiene skills to young females with Autism Spectrum Disorder and Intellectual Disability, *Behavior Analysis in Practise*, **9**, 184-189.

EVENTS

Daisy Chain Educational Services Ltd are holding a variety of training courses in Whiteley, Hampshire. The course, Promoting communication for non-vocal students is on the 3rd August 2019. The courses cost £150 each, per person. Email Daisy Chain directly to book your place, or call 07813932363.

Contextual Consulting offer a variety of online webinars and workshops on their website. 'Enhancing your ACT practice with Relational Frame Theory (RFT) - a Master class', will be hosted on the 10th and 11th of October in London presented by Yvonne Barnes-Holmes. There is also, 'ACT for Young People—the Thriving Adolescent' will be on the 14th and 15th of November in London, presented by Dr Louise Hayes.

The UK-SBA is hosting Dr Susan Schneider on the 17th October in London. Dr Susan Schneider authored 'The Science of Consequences: How they Affect Genes, Change the Brain and Impact our World'. Registration will open in August, so check the website for more information!

NATURAL ENVIRONMENT TEACHING (NET) IDEA

This months NET idea is role playing 'Doctors and Nurses'. You can use bears or dolls as patients or be the patients yourself. This play activity gives a great opportunity for imaginative play, although may require some props, for instance, stethoscope, empty bottles (medicine) and a toy syringe (play, 7M, 8M). You can incorporate all these instruments, and also body parts, in the play as both tact or receptive targets (LR*: 4c, Tact 7a). These may also work as mand targets. This NET will allow you to work on tact or receptive targets of different actions, sleeping, sneezing, coughing, for example (LR*:4d, 5b, Tact, 6b, 7d, 10a). Also noun-verb combinations if using bears or dolls to support the play, for instance "baby sleeping" or "bear laughing" (tact 9M). This activity also supports imaginative play development (play 11M). It can also to help to decrease anxiety for you client when they visit the doctors, as they are familiar with the instruments and decreases the uncertainty.

Preceding skills reference to the VB-MAPP Assessment tool:

Sundberg, M. L. (2008) Verbal Behavior Milestones Assessment and Placement Program: The VB-MAPP. Concord, CA: AVB Press.

*LR: Listener Responding

https://flic.kr/p/8K3DKK

PRODUCTS

This month's wish list contains items that will help you run a toilet training programme at home! In addition you will want some extra special rewards that your child will love!

TERMINOLOGY

Escape Extinction: This is when behaviours that are maintained by negative reinforcement (escape or avoidance) are blocked, by using prompting or blocking to ensure the person engages in an alternative behaviour, and preventing them from escaping the situation.

STUDY TIPS

This year Ryan O'Donnell (aka Ryan-O of the Daily BA) developed a new podcast, The Controversial Exchange, with his colleague Dimitri. Podcasts are a great way to expand and develop your understanding. Podcasts are easy to listen to when you're travelling, exercising or doing chores around the house! Check it out!

PEOPLE WHO INSPIRE US

Bridget Taylor, Psych, BCBA-D, is an influential Behaviour Analyst who has been working in the field for over 30 years. In 1988, she co-founded Alpine Learning Group with a group of parents to help them access services for their children. This school offered individualised programmes based in the principles of Applied Behaviour Analysis (ABA). The school is known as "state of the art" and has a systematic approach to training. She studied at Columbia University where she completed her Masters degree in Early Childhood Special Education. She then studied at Rutgers University were she obtained her PhD in 1996. She is renowned for her commitment in developing scientist=practitioner model and has authored over 40 peer reviewed papers. She also has held editorial roles with the *Journal of Applied Behavior Analysis*, *Behaviour Analysis in Practice* and *Behavioral Interventions*. Bridget is also known for being the therapist who worked with Catherine Maurice's daughter in the book 'Let me Hear your voice'. She has been recognised for her contributions to the field by Association of Behavior Analysis International (ABAI) and received the ABAI's Fellow designation. To learn more about Bridget, visit her Alpine Learning Group Page, or her ABAI page.

Next month we're looking at *Errorless correction Procedures*, so be sure to subscribe so you receive the next exciting edition.

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