

Using an interview informed synthesised contingency analysis and functional communication training to effectively increase appropriate communication and decrease maladaptive behaviours

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Executive summary

The purpose of this case study was to conduct an empirically tested functional analysis on behaviours that challenge emitted by one pupil, to determine why they were occurring (what the pupil was trying to communicate) and what appropriate communication response could be taught to replace the behaviours. Individualised functional communication training was implemented to teach the pupil how to appropriately communicate their wants and needs and then how to respond in situations where preferred items were unavailable.

Introduction

Behaviours that challenge can have a significant impact on an individual's quality of life, access to education, social skills and more (McClellan, Grey, & McCracken, 2007). Strategies to reduce these barriers are therefore, very important. Recent research within the field of Applied Behaviour Analysis (ABA) has identified that behaviours that occur at the same time, are often sensitive to the same setting events and consequences (Warner, Hanley, Landa, Ruppel, Rajaraman, Ghaemmaghami & Gover, 2019); this means that, when behaviour that challenges is analysed effectively and an appropriate replacement behaviour is taught, multiple topographies of behaviour can be reduced.

The purpose of this case study was to implement the practical functional assessment (PFA) procedures to ethically determine the function of behaviours that co-occur and identify an appropriate communication response that will allow the pupil to appropriately communicate and reduce the need to engage in inappropriate behaviours (Jessel, Ingvarsson, Metras, Kirk & Whipple, 2018).

The practical functional assessment consists of:

1. an interview informed synthesised contingency analysis (IISCA) to identify the setting events and what is reinforcing the behaviour (i.e. what is the individual trying to communicate)
2. teaching a functional communication response (FCR) with increasing complexity
3. teaching a tolerance response (for when access to reinforcement is denied)
4. increasing the delay before accessing reinforcement.

In this particular case study, the stages implemented were the IISCA, FCR with increasing complexity and teaching of the tolerance response.

Method

The pupil was a 12-year-old who used vocal speech to communicate, he was starting to use full sentences to make requests. He enjoyed social interaction with adults, but also had a strong preference for technology. He could independently navigate computers to source his favourite online videos. He had a range of skills: labelling and locating common items, writing his name, answering simple questions, independent play and could complete many self-help skills independently.

However, he frequently engaged in behaviours that challenge, these presented as a significant barrier to his learning. The most prevalent and challenging behaviours that he engaged in were; flopping to the floor, running away from his tutors or instructional area, taking his clothes off and hitting his own head. The frequency and duration of episodes of behaviour in which these topographies were observed regularly impacted his learning day; on average the pupil engaged in 6 episodes per day with an average duration of 55 minutes.

Analysis of the behaviour: The IISCA is a questionnaire, often answered by parents, caregivers and/or professionals. It helps identify the setting events and reinforcers that are present during episodes of behaviours that challenge and is completely individualised (Herman, Healy & Lydon, 2018). The IISCA was completed by the pupil's school staff. Following the questionnaire, the hypothesised reinforcers and setting events were tested during control and test sessions. This assessment was conducted by the supervisor in a 25-minute session. The assessment involved alternating between control conditions (where the pupil had access to all "reinforcers" identified and no setting events were initiated) and test conditions (where the setting event was initiated and 'reinforcers' only delivered if low-level challenging behaviour was observed).

For the pupil, we identified that access to the computer reinforced episodes of behaviour that challenged and transitions away from the computer were the setting event.

Functional communication response (FCR): The results of the IISCA helped identify the appropriate FCR. This needed to be a novel response that had no previous associations for the pupil and was a generalised term, that would allow access to all reinforcers. Therefore, we introduced the FCR: "Can I choose?".

Setting: All steps of the PFA were timetabled around the pupil's typical school day. The duration of the sessions ranged from 10 to 20 minutes. Sessions were conducted by the pupil's supervisor and instructor. Outside of the sessions, the behaviour plan in place prior to the PFA was implemented as normal. If the pupil requested for his choice at any other time during the day this was put on extinction, as it could not always be honoured, this avoided creating any negative associations with using the FCR. Sessions were conducted at the computer in the pupil's classroom.

Increasing complexity of the FCR and teaching the tolerance response: Initial sessions involved small interruptions of the computer (e.g. instructor turning screen off), the pupil was then prompted (vocal prompt) to say "I choose" by the supervisor. As the pupil began to respond independently and no behaviour that challenged was observed, the setting event and complexity of the FCR was increased (he was required to leave the computer and sit at a table) then say, "Can I choose?". As this is an individualised intervention, program changes were made throughout the stages contingent on the pupil responding and current skills (See Figure 2).

Once mastery criterion was achieved for FCR, tolerance response teaching was introduced. The pupil was required to use the FCR following the interruption of the computer, this was then denied ("no/not right now") by the instructor and pupil was taught to say "okay". Once this chain of responding was complete, the pupil had access to the computer (Figure 1). Intermittently, the FCR "Can I choose?" was honoured immediately to strengthen that response.

Results

The results of the IISCA stage are displayed in Figure 3. Following the IISCA questionnaire, we hypothesised that behaviours that challenge were reinforced by access to the computer, and transitions away from the computer/classroom where computer is located is the setting event. During the control conditions, when the pupil had free access to the computer with no interruptions, no behaviours that challenge were observed. During the test setting, when the computer was interrupted and a transition initiated, low level behaviour that challenged was observed on 100% of the trials. This confirmed our hypothesis.

The results of the FCR stage are displayed within steps 1-8 and 10 in Figure 4. The initial FCR was a simple "I choose" at the computer, the pupil made quick progress with this response and behaviour that challenged during the sessions reduced significantly (step 2). When the setting event was increased (a transition away from the computer was introduced), progress was slower and low-level behaviour that challenged fluctuated between 0 to 40% of the trials. The pupil successfully transitioned away from the computer and emitted the simple FCR after 15th session (step 3). In step 4, the complexity of the FCR was increased and progress was made quickly. Steps 5 to 7 were introduced to further expand the complexity of the FCR by teaching the pupil to gain attention first. Progress during these steps dropped significantly and errors were often made, therefore a decision was made to remove this aspect of the FCR and continue to work through the PFA stages.

The results of the tolerance response stage are outlined in Figure 4; steps 9 and 11. Instances of behaviour that challenged remained low during these sessions. When step 9 commenced, the pupil tolerated denied access to the computer, but started to make errors with the original FCR. A decision was made to return to the FCR stage (step 10) until the FCR was emitted with 100% accuracy and there were no behaviours that challenge for at least five consecutive sessions. Following solidification of the FCR, the tolerance response was then reintroduced; progress was significantly higher - independent responses ranged from 20-80%. Due to time constraints this session was unfinished and needs to be continued.

Discussion

When implementing the PFA stages, the levels of behaviour that challenge emitted by the pupil significantly reduced and effective communication increased greatly. This case study outlines the importance of accurately identifying what the learner is trying to communicate by engaging in

behaviour that challenges. The IISCA is an ethical approach to functional analysis, it helps build a picture of the learner prior to any observation. As behaviours that co-occur are most likely sensitive to the same reinforcers, analysts using the IISCA can look for low-level pre-cursor behaviours and reinforce at that point, therefore high-level behaviours that challenge are not induced.

The FCR procedure helped the pupil effectively communicate without engaging in behaviours that are deemed challenging. By introducing the tolerance response, we also gave the pupil appropriate strategies to tolerate inevitable denial of preferred items. Although these sessions were conducted in timetabled sessions and with specific staff, going forward the situations and language become natural and “Can I choose?” is a response that can be generalised to other settings throughout the school day, in the community and at home, which will have significant impact on the pupil’s access to education and overall quality of life.

References

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Figure 1: The chain of communication responses individualised for the pupil

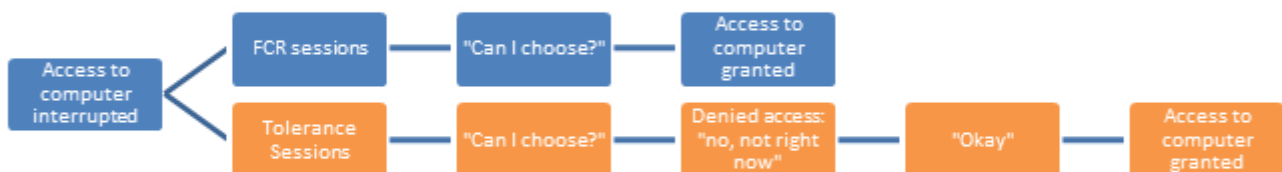


Figure 2: An outline of the steps introduced to the pupil

1. Baseline – confirm hypothesis (reinforce challenging behaviour)
2. “I choose” at computer
3. Move to table → “I choose”
4. Move to table → “Can I choose?”
5. Move to table → “Hey” (gain attention) → “Can I choose?”
6. Move to table → tap adult → adult responds “Yes, M” → “Can I choose?”
7. Move to table → tap adult & “hey” → adult responds “Yes, M” → “Can I choose?”
8. “Can I choose?” at computer
9. “Can I choose?” at computer → adult responds “no” → “okay”
10. “Can I choose?” at computer
11. “Can I choose?” at computer → adult responds “no” → “okay”

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Figure 3. The results of the interview informed synthesised contingency analysis

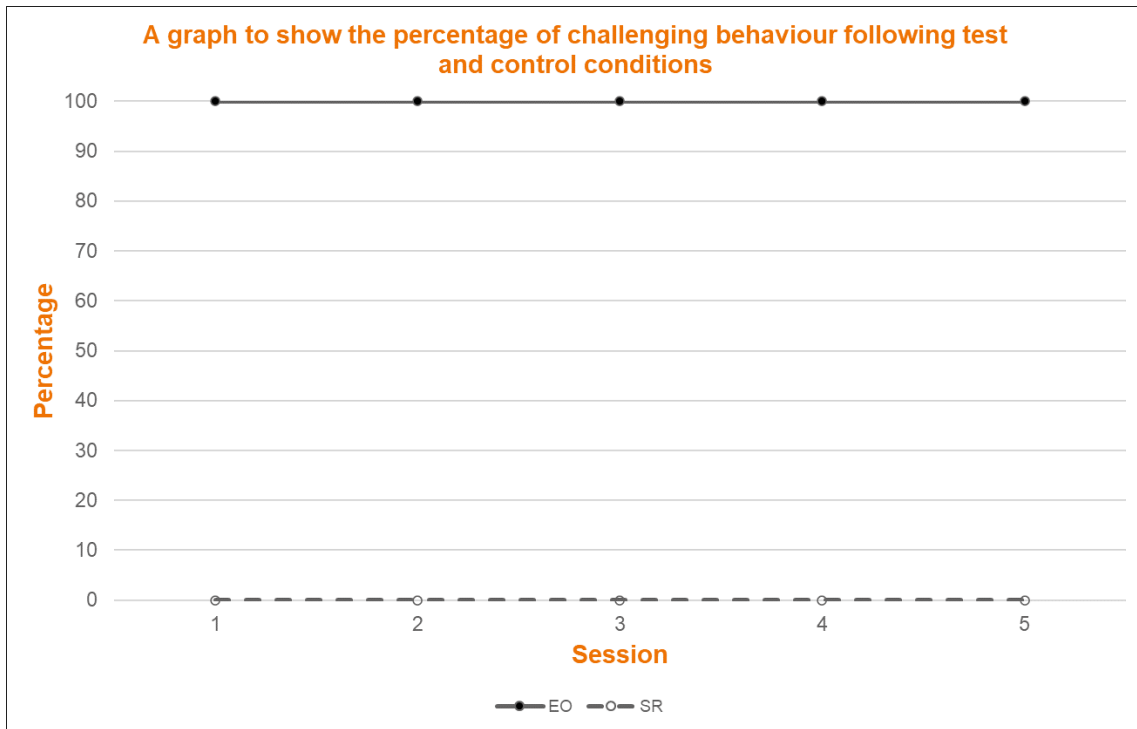
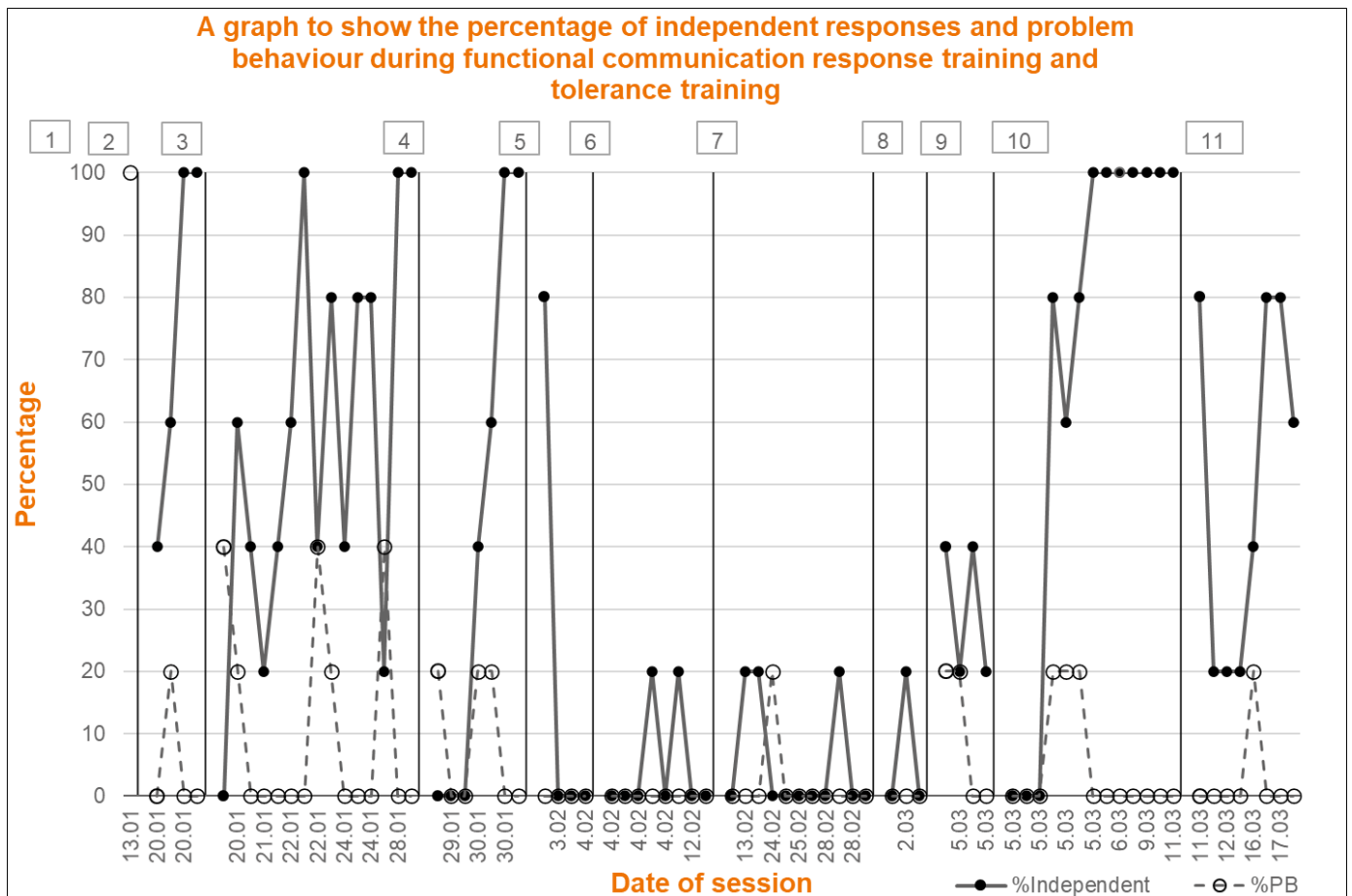


Figure 4. The results of the functional communication response and tolerance response phases



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