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Coyle, C., & Dillenburger, K. (2019). The good inclusion game (GIG): Effective practice for inclusive education. *Academia Journal of Educational Research*, 6(12). Advance online publication. <https://doi.org/10.15413/ajer.2018.0305>

Published in:
Academia Journal of Educational Research

Document Version:
Peer reviewed version

Queen's University Belfast - Research Portal:
[Link to publication record in Queen's University Belfast Research Portal](#)

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The Good Inclusion Game (GIG): Effective practice for inclusive education

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Accepted for publication in *Academia Journal of Educational Research* (Oct. 2018)

Acknowledgements:

The research was conducted in partial fulfilment of doctoral level study by the first author under the supervision of the second author. This research was funded by a Strategic Department of the Economy, Northern Ireland (DfE) PhD Scholarship.

The Good Inclusion Game (GIG): Effective practice for inclusive education

Abstract

Inclusion has become a guiding principle in education, although a lack of bespoke teaching methods frequently hinders successful realisation. We developed and evaluated the 'Good Inclusion Game' (GIG). In the GIG, in based on the 'Good Behaviour Game' (GBG), a group contingency-based procedure for classrooms. We first conducted a brief pilot study that confirmed the GBG's already proven benefit of decreasing disruptive pupil behaviours (e.g., talking-out and out-of-seat). However, findings showed the rules of the GBG significantly reduced the opportunity for inclusive behaviours to occur.

Consequently, we changed the rules with the aim to increase inclusive behaviours (i.e., communicating with each other and sharing items or information). Results from two classrooms are reported.

An increase in inclusive behaviours was observed between all children, those with and without identified special educational needs. A notable collateral benefit of the GIG was that disruptive pupil behaviours reduced to a minimum, even without being specifically targeted. Replication studies are underway.

Key terms: Learning disability, Special Educational Needs, Good Behaviour Game, Good Inclusion Game, Applied Behaviour Analysis

Key points

- Children with identified special educational needs often do not feel included in a mainstream classroom
- We developed a game (the Good Inclusion Game; GIG) based on group contingencies to address these issues
- We found that when children play the GIG they are more included and work together better, disruptive behaviours reduce.

Since the UNESCO Salamanca Agreement (1994), inclusion has become a guiding principle for the education of pupils with identified special educational needs (SEN). Although segregated special schools still exist in some countries, increasingly, these children are placed in mainstream classrooms to be educated together with their typically developing peers, aiming for compatible achievements in common curricula (DfE, 2014). Yet, all too often children with identified special needs are left behind academically and/or are socially isolated and have difficulties making friends (Crothers, Linden, & Kennedy, 2007; Rowley et al., 2012). Teachers generally are ill-equipped to support these children and struggle to find effective ways to ensure full inclusion (Fennell & Dillenburger, 2016; Humphrey & Lewis, 2008).

“It is great to have the awareness, but I need practical help and tips for children with specific difficulties such as autism and how to best help them” (NASUWT, 2018, p.19)

Systematic reviews have reported some evidence of the effectiveness of carefully planned interactive and cooperative learning approaches that are based on group contingencies (Teacher Training Agency, 2004).

The present paper describes the development and evaluation of the ‘Good Inclusion Game’ (GIG), a relatively easy-to-use tool for teachers who aim to enhance the inclusion of children with special needs in their classroom. The GIG is a modification of the well-known ‘Good Behaviour Game’ (GBG; Barrish, Saunders, & Wolf, 1969). The GBG is a universal classroom management method that is firmly based on the knowledge about group contingencies and reinforcement developed by the science of applied behaviour analysis (ABA) (Lynch & Keenan, 2016). The GBG has a wide evidence base (Kellam et al., 2011; Leflot, van Lier, Onghena, & Colpin, 2013) and brings significant social and economic benefits. With more than £50 for each £1 pound invested in the programme, the GBG is one of the highest return on investment schools-based programmes worldwide (Washington State Institute for Public Polic, 2016).

The original GBG (Barrish et al., 1969) was developed for a 4th grade classroom of 24 pupils in USA and focussed on two of the main problem classroom behaviours: (1) *talking-out during class time* (answering teacher questions was allowed) and (2) *inappropriate out-of-seat behaviours* (going to blackboard to do work was allowed). These particular behaviours were chosen because 7 of the pupils in this class had been referred to the principal several times due to disruption and uncooperativeness. The rules of the GBG were simple: During the GBG the class was split into two groups and occurrences of the two target behaviours were noted with a mark on the blackboard. The group with the lowest number of ‘marks’ at the end of the lesson won a pre-determined prize/reinforcer, e.g., extra time at recess, no/less homework.

The problem behaviours targeted in the GBG match many of the issues experienced by teachers in other classes, and therefore the findings of the original study have been replicated 100s of times in classrooms across the world (e.g., Cappella, Frazier, Atkins, Schoenwald & Glisson, 2008; Chan, Foxcroft, Smurthwaite, Coombes, & Allen, 2010; Harris

& Sherman, 1973; Kellam et al., 2011; Kleinman & Saigh, 2011). The data show repeatedly that *talking-out during class* and *out-of-seat behaviours* are greatly reduced while the GBG is played and teachers generally report that this allows them to teach more curriculum content, i.e., playing the GBG can recoup up to 1 hour teaching time per day (Murphy, 2015).

The GBG has positive longitudinal effects (Poduska, Kellam, Wang, Brown, Ialongo, & Toyinbo, 2008; Bradshaw, Zmuda, Kellam, & Ialongo, 2009). Importantly, it improves the target behaviours (i.e., out of seat and talking-out) for a variety of participants, including preschool, high school and State hospital residents (Tingstrom, Sterling-Turner & Wilczynski, 2006). Many studies have shown that the GBG is the most effective strategy a teacher can presently use to prevent emotional, behavioural and social problems, while increasing academic lifetime success (Poduska, Kellam, Wang, Brown, Ialongo, & Toyinbo, 2008; Bradshaw, Zmuda, Kellam, & Ialongo, 2009).

While the GBG is free of charge and replications do not require any additional permission (e.g., Lynch & Keenan, 2016), the significant positive impact of the GBG led to the development of the commercial label PAX Good Behaviour Game (PAXIS Institute, 2014).

However, the GBG has not been applied widely in special education settings, with the notable exception of Lastrapes (2013), who used it in an inclusive classroom for children with emotional or behavioural disorders (EBD). In fact, the National Association for Special Education Teachers (NASSET, 2016) warns teachers not to ‘... overdo it!’ and recommends to ‘allow breaks from the Game during the school day’ (p.1). There have been no scientific evaluations of the GBG that focussed specifically on its effect on inclusion of pupils with special needs in the classroom.

Ethics

All studies reported here received ethical approval from Queen’s University Research Ethics Boards and were conducted in line with the University’s good research and data protection guidelines. All child participants assented to participation after their parents had signed consent to their children’s participation.

Pilot study

We conducted a brief pilot study using the original GBG (Barrish et al., 1969) in a medium-sized special educational needs school in a rural town in the UK.

Participants: The class included 6 children (boys and girls) aged between 10-13 years old with a variety of identified special needs, including generic learning disabilities, Down’s Syndrome and autism.

Research tools and procedure: The GBG was played during one lesson (15 minutes baseline and 15 minutes GBG). Data were collected as in Barrish et al. (1969), using a tick on the board for each instance of the targeted behaviours (for full data set see Coyle, 2018).

Results: Findings of this brief pilot study confirmed the GBG's already proven benefit of decreasing the target behaviours, in fact, the children just sat quietly on their seats and did not participate in any activities, i.e., they did not ask questions or interacted with each other.

In brief, the original GBG was played in a special needs class. The target behaviours were reduced effectively during the GBG, but behaviour reduction generalised to other non-targeted behaviours. This means that the GBG reduced target as well as non-targeted behaviours (i.e., functionally speaking, punishment contingencies) (Greydanus et al., 2003; Sindelar, Honsaker, & Jenkins, 1982).

There is ample evidence that punishment contingencies have many negative side-effects (Dillenburger & Keenan, 1995; O'Reilly, 2005), including suppressing alternative behaviours and not teaching appropriate behaviours. Therefore, modern-day behaviour analysts generally avoid these kinds of procedures and develop interventions that are based on reinforcement contingencies. Reinforcement-based procedures, including token economies and peer-tutoring can be effective in supporting academic as well as social progress (Bowman-Perrott, DeMarín, Mahadevan, & Etchells, 2016; Justice, Logan, Lin, & Kaderavek, 2014), however, these are often not used explicitly in inclusive classrooms (Kalambouka, Farrell, Dyson, & Kaplan, 2007).

The aim of the main study reported here was to develop the GBG into a simple classroom management strategy that focussed on inclusive behaviours. We called the new game the Good Inclusion Game (GIG; Coyle & Dillenburger, 2016a;b). The aim was to investigate, if the GIG facilitated the increase of inclusive behaviours between children with identified special needs and their typically-developing peers. We were also interested to know, if playing the GIG would reduce disruptive behaviours. Therefore, research questions to be addressed include:

- How effective is the GIG at improving inclusive behaviours (e.g., helping and sharing) for children with special educational needs and their typically-developing peers?
- What effect does the GIG have on disruptive behaviours?

Main study methodology

Participants

Two Primary school classes took part in this study; class size was 20 and 24 children respectively, including similar number of boys and girls. The children were aged between 7-11 years of age. Each class included at least one child with identified special needs, including learning disability, down syndrome, attention deficit hyperactivity disorder (ADHD), autism. Only classes where the parents of the child with identified special needs had consented to the study took part. Data reported here were collected on one group per class, i.e., a total of 24 pupils.

Research Tools

The Good Behaviour Game (GBG) and the Good Inclusion Game (GIG) were used.

The GBG was used as described in the original paper by Barrish et al. (1969). The class was split into two groups of similar size. The GBG target behaviours were: (1) *off-task talking-out during class time*; on-task talking was allowed; (2) *off-task out-of-seat behaviours*; leaving the seat to complete a task was allowed. Marks were awarded for breaking the rules. The group with most marks lost; the group with the fewest marks won. A pre-determined 'prize' (e.g., extra 5 minutes break; first in line to lunch) was given to the winning group or both groups, if they scored fewer than 6 marks.

The GIG is much the same as the GBG, however, the rule were changed with the aim to increase rather than reduce the target behaviours, i.e., the GIG rules specified 'what to do', rather than 'what not to do'. Given the focus of this intervention was on the inclusion of children with special needs, the GIG target behaviours were adapted from the Inclusion Index Indicators (CSIE, 2016):

Inclusion Index Indicators A1.1: 'everyone is made to feel welcome' was defined as Target Behaviour 1 (TB1): *Communicating*. Talking to others about group activities or ideas and providing direct feedback, e.g., 'Good idea', 'I agree', 'I don't agree but I think...'. Answering other pupil's and teacher's questions. Asking other pupils for information and verbally giving information when others asked (talking off-task was not marked as target behaviour)

Inclusion Index Indicator A1.2: 'students help each other' was defined as Target Behaviour 2 (TB2): *Sharing*. Examples of TB2 included asking other pupils for class materials (e.g., pencils, paper etc.) and/or physically handing items when another pupil asked for them. Asking, if the other pupil would like to use these materials. (taking things from other pupils without asking was not marked as Target Behaviour 2).

The instructions were as follows:

"Today we are going to play a game. It's called the Good Inclusion Game. You will be split into two teams and I will explain the rules to you now:

- 1) Show team work through communicating/talking: You are allowed to talk to your team members to help each other complete your class work. This means you should work together to make sure each of you understands the work.*
- 2) Share with others: It is important that you share class stationary amongst yourselves including any colouring pencils or things needed for the class task. This means you must be kind and share with others, if they need or would like to borrow any of your materials. You are allowed to collect any pencils or things you or your group need to help with your work.*

The game will be played for 15 minutes. I will place a mark on the board for each time a team member follows one of the rules. So, to gain points you must help one another by

talking about the task and sharing items with one another when someone needs them. You are playing as a team and you must work as a team to win.

The winning team or teams, if you both get over 6 marks on the board, will receive prizes. The prize for the winning team will be....” (e.g., extra 5 mins break, sticker on wall chart, first in line to lunch etc. to be agreed with the children).

Observation sheets (see Coyle, 2018) were developed to record the behaviours of both the child with special needs and their typically developing peers. This allowed for separate results to be collected on each of the behaviours during baseline and game phases. Interaction data on ‘peer to peer’ were also collected. A single diagonal line (‘/’) was used to record each incident of ‘child with special needs to typically developing peer’ and ‘typically developing peer to child with special needs’ interactions, while a ‘x’ was used to record each incident of ‘typically developing peer to typically developing peer’ interaction.

Research Procedure

Consent was gained from the principals of two schools to take part in the study. Teachers and parents signed consent forms that were distributed by the school principal. Once signed consent forms were returned, the children assented to the game.

The class was split into two groups in a way that ensured that only children whose parents had signed consent forms were allocated to Group 1, including at least one child with special needs; Group 1 included a total of 11 and 13 children respectively. All remaining children were allocated to Group 2. While both groups took part in the game, research data were collected only on Group 1.

In Classroom 1, an ABAC design was implemented. On Day 1, baseline measures were collected (A) and then the GBG was played (B). On Day 2 (next day), another baseline was collected (A) and then the GIG was played (C).

To counterbalance potential ‘order effects’ (Carlsson, Mørkbak, & Olsen, 2012; Lucas, 1992), the order in which the games were played then was reversed (ACAB). On the first day in Classroom 2, after the baseline (A) the GIG was played (C). On Day 2, a second baseline (A) was collected before the GBG was played (B).

Each observation phase lasted 15 minutes. The observer (first author) sat at the back of the classroom and noted frequency of each target behaviour during one-minute observation intervals.

Results

Figure 1 shows the results during 4 observation phases (ABAC) in Classroom 1. The graphs on the left show data for the children with identified special needs (n=2), the graphs on the right show data for peers (n=9). The graphs at the top show data for behaviours targeted during the GBG (disruptive behaviours) and the graphs at the bottom show data targeted during the GIG (inclusive behaviours).

For the children with identified special needs, there was evidence of relatively high levels of disruptive 'talking-out' behaviours during the first baseline (average $n=3$ per target child). This was significantly reduced during the GBG, when this behaviour was explicitly targeted (average $n=0.5$ per target child).

During baseline observations on Day 2, 'talking-out' behaviours were higher than pre-GBG levels (average $n=4.5$ per target child), however, they reduced again during the GIG phase (average $n=2$ per target child), during which this behaviour was not specifically targeted.

There was only one incident of 'out-of-seat' behaviours during the first baseline. This behaviour disappeared entirely during both the GBG and the GIG phases. In fact, it did not recover during the second baseline phase.

'Hands up' to request to speak did not occur during baseline and occurred at low frequency during the GBG (average $n=1$ per target child) despite the fact that it was explicitly targeted. It reduced to 0 during return to baseline and occurred once during the GIG, although it was not targeted during that phase.

The graphs on the right shows similar findings in relation typically developing peers during all 4 observation phases. During the first baseline, a total of $n=17$ GBG behaviours were observed (average $n=1.9$ per peer). This frequency reduced by more than 50% during the GBG (average $n=0.9$ per peer), when these behaviours were explicitly targeted. During the second baseline, GBG behaviours occurred frequently (average $n=2.1$ per peer). Finally, during the GIG phase, when these behaviours were not targeted, they still reduced significantly (average $n=1.3$ per peer).

There was a total lack of inclusion behaviours during the first baseline and GBG. However, when the GIG was introduced, there a striking increase in inclusion behaviours was observed for both the children with special needs and their typically developing peers. Relatively speaking, this increase was more pronounced for the 2 children with special needs (average $n=22$ per target child) than for the 9 typically developing peers (average $n=5.7$ per peer).

Figure 2 shows the results during 4 observation phases in Classroom 2 in which the order of the games was reversed (ACAB). This class included 3 children with identified special needs and 10 typically developing peers.

There was evidence of relatively high levels of disruptive 'talking-out' behaviours during the first baseline (average $n=4.3$ per target child). This was significantly reduced during the GIG (average $n=1.3$ per target child) during which this behaviour was not specifically targeted. During the second baseline, again a high levels of 'talking-out' behaviours were observed (average $n=4$ per target child). As expected during the GBG intervention phase, these target behaviours reduced (average $n=1.6$ per target child).

'Out of seat' behaviour occurred twice during each baseline and only once during the GIG. It ceased completely during the GBG.

'Hands up' behaviour occurred only once during the initial baseline phase and did not occur during the GIG or during the second baseline phases. It increased slightly during the GBG phase (average n=1 per child with special needs) when the behaviour was specifically targeted.

The typically developing peers engaged in a total of n=28 disruptive behaviours (average n=2.8 per peer) during the first baseline. This frequency reduced significantly, by more than 80%, during the GIG (average n=0.5 per peer), without explicitly targeting these behaviours. During the second baseline, 'out of seat' behaviours occurred at high frequency (average n=2.4 per peer), however, during the GBG phase, when these behaviours were targeted, 'speaking out' (n=6; average n=0.6 per peer) and 'out of seat' (n=0) reduced significantly. For the 'hands up' behaviour, which was targeted during the GBG there was a significant increase over baseline and GIG phases (n=14; average n=1.4 per peer).

Inclusive behaviours increased when the GIG was played for the three target children (average n=24.3 per target child) compared to n=0 during second baseline and n=1 during GBG. The group of 10 typically developing peers also engaged in significantly more inclusive behaviours during the GIG (average n=6 per peer); this number dropped to n=0 for the second baseline and only n=1 during GBG.

Discussion

The Good Inclusion Game (GIG) was developed based on a widely-used evidence-based classroom management procedure, the Good Behaviour Game (GBG). While the GBG focusses on reducing disruptive off-task behaviours, in other words, 'what not to do', the GIG rules focussed on inclusive on-task behaviours, thus specifying 'what to do'. Findings reported here confirm that the GBG reduced disruptive behaviours. However, importantly, results show that playing the GIG increased inclusive behaviours in both, peers and children with identified special needs, with the collateral side-effect of reducing off-task disruptive behaviours.

A notable benefit of the GIG was that it encouraged communication between peers and children with identified special needs in a structured and focused manner, keeping off-task behaviours to a minimum. Changing the GBG rules from reducing off-task behaviours to the new GIG rules focussing on increasing inclusive behaviours contributed to a notable change in the behaviour of the children and subsequently, the classroom atmosphere.

While the GBG was successful at reducing off-task behaviour as evidenced in many previous studies (e.g., Barrish et al., 1969; Harris & Sherman, 1973; Kleinman & Saigh, 2011), it did not improve inclusive classroom behaviours. The noticeable difference between the GBG and GIG was the significant increase in the inclusive behaviours targeted in the GIG. There was a notable increase in communication between the children with identified special needs and their typically peers, that was nearly exclusively on-task. This focused communication related to the classroom tasks and kept off-task 'speaking out' behaviours at low levels. In

fact, field notes showed that the GIG promoted discussion between the teams primarily about their work.

Importantly, the children with identified special needs engaged in increasingly with their typically developing peers, through active participation in both communication and support, such as giving class materials to each other during GIG phases. Typically developing peers also showed an increase in inclusive behaviours displayed towards the children with identified special needs. This was confirmed in both classrooms.

The GIG turned the classroom into a peer-tutoring group work session irrespective of the curriculum taught. Even work such as mathematics, usually done independently, was transformed into group work when GIG rules applied. Physically sharing class materials and communication increased during the GIG.

When comparing the GIG with the GBG there are obvious differences in the instruction and, as a result, in the effects on children's behaviour. The behaviour reduction contingency of the GBG and its rules, e.g., not speaking out during class time and remaining in the seat (Barrish et al., 1969) make interaction between peers next to impossible. This makes the GBG suited primarily to independent work when the opportunities for inclusion related behaviours are limited. Thus, the GBG is a useful classroom management tool where discipline and focussed work is required. GBG data reported here are consistent with previous studies that showed the decrease of disruptive 'speaking out' and 'out of seat' behaviours during the GBG (Cappella, Frazier, Atkins, Schoenwald & Glisson, 2008; Chan, Foxcroft, Smurthwaite, Coombes, & Allen, 2010). However, the GBG was ineffective in relation to inclusive behaviours between typically developing peers and children with identified special needs.

In contrast, the GIG used a positive reinforcement contingency to encourage peer interaction and promote real inclusion in the classroom, while at the same time being curriculum neutral, i.e., it can be played during any subject lesson and thus enhance academic inclusion. When compared to the GBG, the GIG opened up opportunities for inclusive involvement and participation in class activities of children with identified special needs and their typically developing peers while at the same time reducing disruptive off-task behaviours.

Conclusion and direction for future research

Teachers have complained about lack of available inclusive teaching methods.

"Usually the training consists of highlighting the problems rather than the solutions."
(NASUWT, 2018, p.19)

The GIG is a new tool for inclusive classroom management. Data reported here are obviously limited as they stem from a small group of children only and therefore results are best viewed as proof of concept rather than definitive evidence.

Future research should to explore large scale roll-out of the GIG across multiple sites and different cultural contexts. Future research also should assess generalisation of GIG with different child characteristics, such as age, disability, and gender. Investigating longitudinal maintenance effects of GIG was not part of this study, but of course is necessary, as is assessing the impact of the GIG on academic achievement. Other important areas for future research are the social validity of the GIG for pupils and parents. Obviously, replication studies will be necessary to validate the effectiveness of the GIG across these settings. A cost-benefit analysis of GIG, such as that available for the GBG would also be beneficial.

However, this study showed that changing the rules of the GBG has significant potential. The principle of moving from the behaviour reduction contingency in the GBG to a reinforcement contingency that aims to increase behaviours in the GIG (Cooper et al., 2007), achieved increases in socially important target behaviours as well as collateral decreases in non-targeted disruptive behaviours.

Therefore, the GIG potentially provides a new framework that can be adapted to the needs of other teaching contexts. It is entirely possible that new rules, for example, related to academic content could be used to help address other behaviours of interest relevant to education (e.g., in French lessons, speaking in French to a peer could be a rule that earns a point).

Behaviour analysis is the science that when applied to socially relevant behaviours has shown to be highly effective. The Good Inclusion Game (GIG) is yet another example of the positive effects that can be achieved with applications of behaviour analysis in the real live settings such as the classroom (Dillenburger, 2012).

Another major advantage of the GIG is that it does not treat children with identified special educational needs differently from their typically developing peers. While data reported here were separated, this was for research purposes only; it clearly was not the case in the classrooms where all children responded to the same rules of the games. As such, the GIG offers a new and inherently inclusive classroom practice for teachers.

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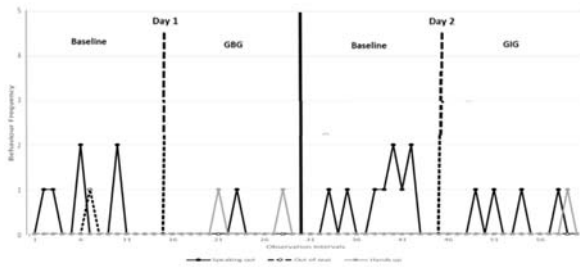
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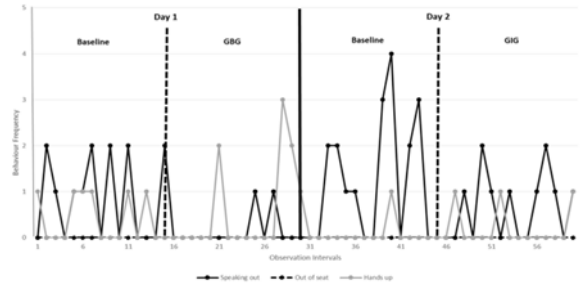
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Figure 1: GBG and GIG target behaviours for children with identified special educational needs and peers across four conditions (ABAC)

GBG behaviours

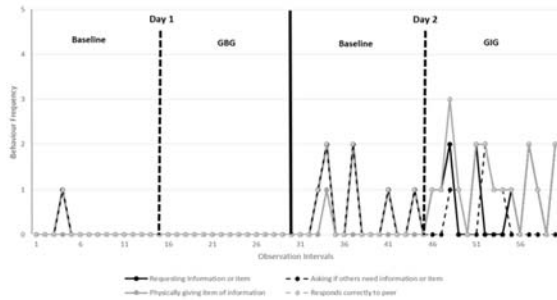


Children with identified special needs

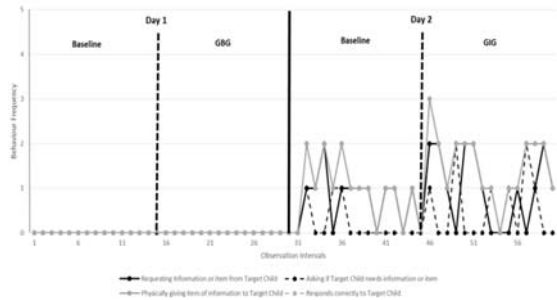


Typically developing peers

GIG behaviours



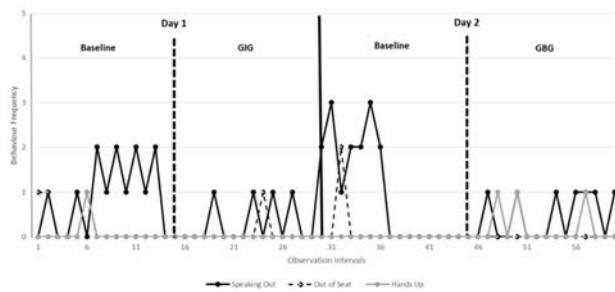
Children with identified special needs



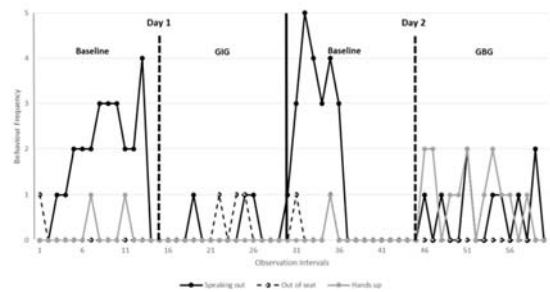
Typically developing peers

Figure 2: GBG and GIG target behaviours for children with identified special educational needs and peers across reversal conditions (ACAB)

GBG behaviours

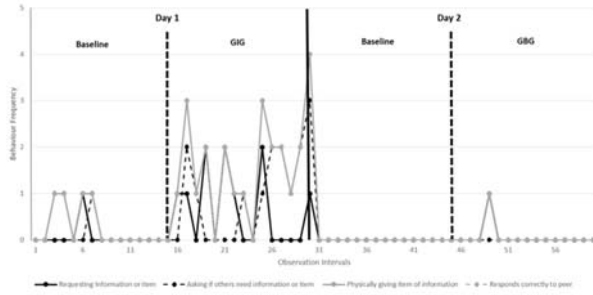


Children with identified special needs

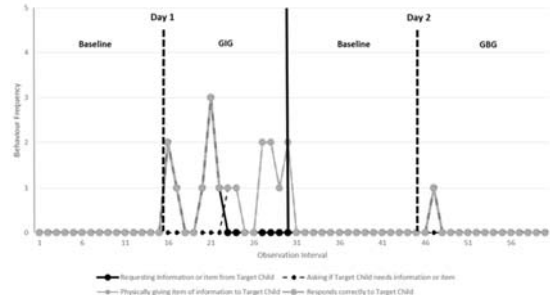


Typically developing peers

GIG behaviours



Children with identified special needs



Typically developing peers