

The effectiveness of reinforcement for learning in the classroom

There are various methods to behaviour management in the classroom (Porter, 2020) many of which use the process of Reinforcement and its joint companion operant-conditioning. Reinforcement involves learning how to give appropriate actions in situations to maximise rewards (Sutton & Barto, 2018). It is carried out when a decision is being made in order to control or alter a pattern of behaviour (Maltby et al, 2013), this is particularly apparent in a teaching environment within the roles of discipline (Sari et al, 2019) although, you may not notice it being done. Reinforcement can also either be increased, decreased or be maintained, depending on the type of behaviour being studied (Skinner, 1963). Operant Conditioning on the other hand, although highly associated with reinforcement, has slight differences, by ensuring that behaviours are set and an individual knows right from wrong. This is done by employing rewards and punishments, depending if an individual has catered the appropriate behaviour or not (Cherry, 2019), this conditions an individual to know what behaviour is suitable in any scenario (Blackman, 2017). This essay will focus on the theory of operant conditioning and reinforcement, with how it applies to the classroom through token economy, the good behaviour game, applied behaviour analysis (ABA) and the ABC observational tool (antecedent, behaviour, consequence).

The theory of Operant conditioning was first proposed by B F Skinner (1963) which sparked a new view on behavioural learning and made great contributions to the psychology of behaviourism, investigating the notions of reinforcement, particularly proposing that emotions and actions can be manipulated to act in certain ways. This process went on to be widely recognised as Operant Conditioning, with 'operant' referring to a behaviour that has consequences when acted. Skinner altered the belief of child development, influencing that behaviours can be manipulated through positive and negative ways (Skinner, 1963). Although, if a behaviour is heavily altered by punishment, it is less likely to be repeated and can be damaging towards the pupil (Marinda et al, 2020). Operant conditioning and reinforcement can be implied to the classroom through methods such as token economy (Matson et al, 2016). Which can be used to aid disruptive behaviour (Shakespeare et al, 2018), help students with learning disabilities (Aziz & Yasin, 2018) and can be used to keep track of individual student progress towards behavioural goals (Cravalho, 2019). Token economies give teachers an alternative method to promote appropriate classroom and social behaviours, which allow students to either earn or lose tokens, dependent on the action acted (Hackenberg, 2018). The three main components include a particular list of target behaviours which are discussed prior, secondly the tokens received by students for hitting that target and back-up reinforcers that students gain by swapping tokens for prizes (McLaughlin et al, 1988). The first cited researchers of token economies are Ayllon and Azrin (1965), their aim was to develop stronger social skills with adults using reinforcement procedures. Tokens with an immediate consequence were used and were later swapped for rewards. This procedure made it possible for psychologists to develop target behaviours with patients (Ayllon & Azrin, 1965).

A study by Aziz & Yasin (2018) aimed to increase a primary special needs student's concentration levels in the classroom through token economy. During the early days of observation, the disruption in class affected concentration levels of the student. However, a token was given to the student every time they answered questions correctly or sat still within a certain period. These tokens were then redeemed as back-up reinforcement. The highest amount of disruptive behaviour was reordered in the first week. However, throughout the third and fourth week changes in behaviour were shown and the ability to complete tasks independently was done, demonstrating the effectiveness of token economy on behaviour management. However, this method may not work for every child as they all have unique needs. Although it manages to condition an individual to know what is an appropriate behaviour.

The most modern recognisable type of token economy for its use in classrooms is ClassDojo (Pizzuto, 2015). Alternatively to physical rewards, it is an online free program which is used through a computerised device and is widely seen as classroom management tool (Love, 2022). The software is used in 90% of schools in the United States alone and in over 180 countries (Marachi, & Quill, 2020). ClassDojo provides teachers with the capability to give students unique profiles and the ability to gain points (either to whole class or individual) for showcasing specific skills (Yuen, 2021). Much like the reinforcement process, the points are allocated as a generalised reinforcer and the prize the student earns acts as back-up reinforcement. These are used to increase the probability of students engaging in an appropriate manner (Cravalho, 2019).

A study conducted by Chiarelli, Szabo, and Williams (2015) investigated the use of ClassDojo with first grade students to recognise acceptable behaviour during a reading lesson. The software made it possible for the students to redirect their behaviours to be successful, this was showcased through fewer disruptions. The teacher designed an appropriate behavioural plan, in which each student had their own icon, with a list of good behaviours such as following directions, being kind and bad actions, such as shouting and being off task. ClassDojo enables the teacher to keep a tracked documentation of the student's daily behaviours by tallying icons received. Results showcased that a higher number of negative behaviours were apparent at the beginning of the study compared to the end. However, limitations of this study was that it was a small sample of participants and it was done in a small time-frame of two months. Moreover, some educators may find ClassDojo to be too time consuming, and especially difficult if not confident with technology. Aziz & Yasin (2018) demonstrated that although a small participant sample was used and can be hard to examine particular individual benefits, that token economy is beneficial in conditioning behaviour through physical rewarding. However, Chiarelli, Szabo, and Williams (2015) showcased benefits for whole class learning. Both studies also showcased that behaviour was worse at the beginning of the study, with students being better conditioned at the end. This could be because behaviours have been further repeated towards the end of the study, making students more aware of acceptable and non acceptable behaviours (Skinner, 1958) making them less likely to act in the wrong manner, and more focused on the rewards.

Comparably with the types of token economy, a further type of reinforcement for the classroom can be utilised through The Good Behaviour Game (GBG). The GBG is also a behaviour management strategy, however compared to token economy, it is utilised through group teamwork in order to promote positive behaviours (Mitchell et al, 2015) with the belief that the need to work as a team in order to win a award will promote better behaviour. This method was first proposed by Barrish, Saunders and Wolf (1969) to originally cater for only disruptive behaviours but it is newly used in science. The three main components of the game as described by Barrish et al (1969) are firstly placing the students into teams, giving points to teams that showcase inappropriate behaviours and rewarding those with the lowest number of points, meaning the least amount of problem behaviours (Barrish et al, 1969). Compared to gaining tokens to win rewards through token economy, the GBG does the opposite and gaining points means you showcased more disruptions, making the team with the least, the best behaved (Lynch & Keenan, 2018). The GBG has shown effectiveness across many types of behaviours, including verbal and physical aggression, hyperactivity (Flower et al, 2014) and oppositional behaviours (Bowman-Perrott et al, 2016) and is believed to support social and long-term health and social skills through reinforcing prosocial behaviour in the classroom (Dijkman et al, 2015).

The GBG has been widely analysed through scoping reviews, one of which by Jornevald, Pettersson-Roll, & Hau (2024), focusing on the use of GBG with special educational needs (SEN) students. Thirty studies were included and evidently showcased a positive behaviour correlation, benefitting to SEN students with improved concentration levels and better involvement. Although GBG was once focused on disruptive behaviour, with the verse severities of educational needs, the game can be assumed to get increasingly diverse to its benefits. Comparably, Coombes et al (2016) used a mixed-methods investigation into the implication of The Good Behaviour Game (GBD) in six primary schools with 222 children, with improvements found in inclusion, and similarity to Jornevald et al (2024), concentration was improved, as well as social participation once the game was implemented. Moreover, Lynne (2015) investigated the effectiveness of the GBG in three different school classrooms, this was done in order to determine if the GBD would affect appropriate behaviour in a high school. Disruption levels were tested before and after the game began and an instant change was seen in disruption once the game started. However, once stopped, there was an increase of disruption. The study highlights that the behaviour of other students were possibly influencing other students, with a potential concern for aggression towards rule violators. Supporting both Jornevald et al (2024) and Coombes et al (2016) findings in the effectiveness of the game for different participants. However, it can be implemented for a range of different reasons which are not necessarily accounted for, for example SEN students (Jornevald et al, 2024) with also little research on potential defects it may have, if there are high levels of aggression and competitiveness (Schneider et al, 2016). Moreover, Lynne (2015) found that the game was a good management tool for short term, although behaviours soon changed once there was not a goal to be obtained.

The Good Behaviour Game (GBG) can be implemented through the use of ClassDojo, as investigated by Ford et al (2022) with a focus on disruptive and engaged behaviour. Four different secondary school classrooms were assessed using a female and male teacher, results showcased that the intervention was effective by increasing engagement in all classrooms, supporting the GBG with easily seen reductions in disruption. However, with ClassDojo heavily reliant on internet use, power failure or technical issues must be considered, this was showcased by teacher 2's projector failing to cooperate during the study, affecting the overall method. Further ClassDojo was seen as equally effective towards behaviour, although due to technical issues the results gathered without dojo should be considered as no replication was done to provide stronger evidence.

Furthermore, another implication of reinforcement for the classroom can be done through applied behaviour analysis (ABA). This can be done at a one to one basis with students (Kearney, 2015) as it is a type of interpersonal therapy, which aims to positively influence social skills by doing interventions (Fisher et al, 2021) it is a scientific method in understanding behaviours (Leaf et al, 2016) and engages with those with autism and ADHD (Gharbieh et al, 2021). It refers to the basic theories of behaviour proposed by Skinner (1938) and later by others, which consists of a focus on positive reinforcement, this is done by every goal behaviour obtained, a therapist will cater a reward in return (Dunlap et al, 2001&Kearney, 2015). In order for these programs to be successful they are needed to be behavioural, analytic, technological, conceptually systematic, applied and adapt to generality (Austin et al, 2000). However, it relies on structured and repeated learning much like reinforcement and may not account for creativity or spontaneous behaviour, this may limit a child's chances to adapt to unexpected situations later in life (Leaf et al, 2016).

A study exploring the influence of ABA intervention for students with specific educational needs was done by Pitts (2020). Behaviour analysts worked with teachers to design a functional behaviour support plan and educational programmes, pupils were allocated to certain groups based on not making progress during class or displaying harmful behaviours. Heightened communication, social and living skills was prominent in the results after the intervention was in place, further suggesting that ABA lead to reductions in barriers to learning with less disruption. This study has a small sample size, although it provided how a group of pupils having ABA made more progress compared to those receiving a general education assessment. Further, Sambandam et al (2014) investigated the efficiency of the ABA programme for children with autism, and its benefits to general development, language and adaptive behaviour. The ABA process was implemented for each child five days a week, and the groups of intervention showcased improvements to self-help skills involving eating, dressing and communication. The study concluded that the ABA was successful in helping children with autism be more able to develop these skills and benefitted to their language development also.

Applied behaviour analysis (ABA) compared to token economy, is a more focused approach to reinforcement (Fisher et al, 2021) it showcases how a behaviour works, how it is affected and how it is learned, similarity to the good behaviour game which focuses narrower on teams, it details on individuals progress (Leaf et al, 2016) and is centred to those which have extra educational needs (Pitts, 2020) which the GBG didn't necessarily cater for. Although, needs secure professionals in order to be carried out and may be difficult with funding (Board, 2014). The ABA programme can evidently increase a number of different skills such as attention, memory and academics and decrease problem behaviours, it can be adapted to particular needs of an individual, compared to token economy which cant account for every unique child, as stated by Aziz & Yasin (2018). An important part of the ABA program and process, is using the ABC tool which involves observing a behaviour before, during and after. In order to understand its formulation and treatment (Sarafino, 2011). Antecedent (A) meaning the circumstances or actions prior to the behaviour, this can be verbal, physical or internal such as a thought or feeling. The present/resulting behaviour (B) this is the response, and the consequences (C), which stands for the responses in which follows, this can involve positive reinforcement/conditioning towards the desired behaviour or can have inappropriate responses or no reaction. It is useful for clinicians or carers who want to understand the build up of problem behaviours to carry out the AB analysis through this process (Drossel et al, 2009) much like in cognitive behavioural therapy, in order to alter any problems that may be witnessed.

In conclusion, there are several different factors that cater towards operant conditioning and reinforcement that can be utilised in the classroom. Catered towards different capabilities and needs that aid students. Token economy has showcased that it is useful in aiding disruptive behaviour although using Classdojo in order to do so has more faults when using technology, which could cause difficulty to some individuals. The good behaviour game showcased that it is great in improving whole class behaviour and catered towards team work, although did not account for student aggression or competitiveness within the game, which could potentially affect overall impact of the process and effectiveness. Finally, applied behaviour analysis and the ABC tool caters for those of extra educational needs at a one to one basis, compared to the other tools utilised for classroom conditioning, it may be beneficial to understanding behaviours in more depth compared to the token economy and good behaviour game, although may be more time consuming and difficult to have in education for all students due to its need for detailed professionals and funding. Overall, all implications for the classroom are useful in their own ways, although all have faults and also all need to be studied carefully in order to be used, to see what type will be best suited to a certain classroom or for particular student needs (individual or whole class).

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