MO to ABC

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What drives your child or student to learn?

On Learning and getting motivated to learn

There are various aspects of learning. However, motivation, the drive or passion, is one of the most important aspects of learning. We should use motivation for teaching to be effective. But what is motivation?

Often it is said that people work for their interests and what motivates them. Motivation is key to getting people do certain actions for them to get what one deems an as incentive. And getting what one wants, needs or desires, could be induced.

In Applied Behaviour Analysis (ABA), we use motivating operations to change the reinforcing effectiveness by increasing or decreasing the value of a reinforcer. There are two kinds of motivating operations: establishing operation and abolishing operation.

Establishing operation (EO) is a type of motivating operations wherein there is an increase in the effectiveness of a stimulus as a reinforcer, making this reinforcer more desirable. For example, when you are hungry, food is desirable; and when you are thirsty, water is desirable. Because of the need or sometimes due to deprivation, there is an increase in the reinforcer's value, and you want to evoke that behaviour right away to get what you want.

The other type of Motivating Operations is Abolishing Operation wherein there is a decrease in the effectiveness of a stimulus as a reinforcer. For example, the reinforcer is an edible and after taking it, it satiates you. This brings the case of decreasing the value of that reinforcer - it is less desirable in that moment. You may not want to do the behaviour because the reinforcer does not have any value to you at that moment.

Motivations are powerful; they are often the reason for one's actions. To have motivation to want or not to want something means that it requires a satisfaction on the part of the person, the child or the learner.

In ABA, motivating operations are processes that are used to move forward with the three-term contingency of the Antecedent-Behaviour-Consequence, whether to alter the behaviour in that moment or to alter the function or cause of future behaviours. For example, the deliberate use of motivating operations in terms of deprivation of what a child wants and having these stimuli only available within the instructional setting, is a way to evoke the desired behaviour during instruction. Note that motivating operations are not the same as the Antecedents. In simpler explanation, drives or passions make you pursue a certain action or response, but a cue or signal such as the antecedent is necessary for you to evoke the response.

ABC or the Three-Term Contingency

One of the most significant frameworks of analysis in ABA is the ABC or three-term contingency. We also know this as the operant contingency or behavioural contingency. Using a simple explanation, the A is the antecedent or the cue for the responses, B is the behaviour or the set of responses and C is the consequence which is the outcome or result of the response. Contingency simply means that for the consequence to be delivered, be it reinforcement or punishment, the behaviour must occur. An example is that you ask your child to remove the clothes from the dryer (this is the antecedent). Your child removes the clothes from the dryer and puts them in the clean clothes basket for sorting (this is the behaviour). You then praised your child (this is the consequence).

Based on the number of task opportunities where the ABC contingency happens, over time the behaviour initially developed through the contingency becomes rule-governed: this is the case when there is no immediate consequence (reinforcement or punishment) or there is a delay of more than a minute; the behaviour happens even without reinforcement or no consequence is necessary for the behaviour to be emitted. For example, you are driving and you see a cue or sign that the allowed speed decreases from 80 kph to 50 kph as you drive through a residential area. That antecedent makes you slow down, but it is unnecessary that you get reinforced for lessening your driving speed. You are following a rule.

In all cases, the operant behaviour as a product of the operant conditioning or behavioural contingency, are voluntary and learned through our interaction with the variables in the environment. Antecedents are our everyday cues or signals, or instructions to do something. Consequences make the connection between the antecedent and behaviour relevant and affect the future behaviours. When we gain some control about the cues or signals in our environment, and we evoke the right behaviours at the right time, we call this stimulus control.

Consequences can be social in the sense that it is delivered by another person or automatic, the learner himself or herself issues the consequence. There are at least four types of consequences: Positive Reinforcement, Negative Reinforcement, Positive Punishment and Negative Punishment.

Positive Reinforcement is a process that occurs when a reinforcing stimulus is presented, there is an increase in the behaviour's frequency in the future. An example of this is when your child asks for attention through saying, "please listen to me", and you gave him or her the attention asked for, then this kind of behaviour will most likely be repeated in the future. Reinforcers are the stimuli delivered as part of the reinforcement process. It can be edibles, activities that are desired, tangible, social reinforcement or sensory reinforcement. These are not actually bribes, but more of rewards for doing something appropriate. Positive Reinforcement is the most extensively used concept and process in Behaviour Analysis.

Negative Reinforcement is a process that occurs when a stimulus is taken away or decreased, and there is an increase of the behaviour in the future. For example, you are asking your student to finish his task. But he said he cannot do it because it is so hard. You allowed your student not to finish the task and same behaviours of escape occurred in the future. There are two types of negative reinforcement: escape, which means to end an unwanted activity or prevent the presentation of an undesired stimulus, and avoidance, which means to get away from the undesired stimulus, totally prior to its presentation.

Apart from positive and negative reinforcers, there are also generalized conditioned reinforcers, which have been paired with primary and secondary reinforcers, as social praise, tokens or money. These are generalized reinforcers because they can be exchanged to back-up reinforcers as with the case of money and tokens, and they are less susceptible to satiation—who may be satiated with social praise or money, anyway?

Positive Punishment is a process that occurs when there is a presentation of the stimulus and the behaviour decreased in the future. For example, your child yelled at her sibling. You reprimanded your child. This yelling behaviour decreased in the future. Using the word "punishment" may make you feel uncomfortable. In ABA, we do not use punishment in physical terms or topography but by function, i.e., to decrease the behaviour in the future. Also, punishments are not threatening but they are consequences of someone's actions or behaviours. There are at least five types of positive punishment: reprimands, saying no or stop; overcorrection, such as asking the student to "correct" things by putting the environment in the original state prior to the disruptive behaviour; shock; contingent exercise, where a student is being asked to do something not related to the required behaviour; and response blocking, where the learner's maladaptive behaviour is blocked and he cannot complete the response.

Negative Punishment is a process that occurs when there is a withdrawal or decrease of a stimulus and the behaviour decreased in the future. For example, your student kicked the tower that his classmate built. Then you put your student on time-out, taking him out of the social space. The disruptive behaviour decreased in the future. Negative punishment may also be called penalty, and the examples of these are response cost, such as taking something the learner previously has or has earned and time out, such as removing the student from the place or space.

It is important to remember that positive reinforcement takes primacy as an ideal form of consequence. Both negative reinforcement and positive punishment may be very aversive for the learner, and negative punishment, as the name connotes, is punitive.

Note that the immediacy of the delivery of the consequence is critical, and sometimes the effect of the consequence may be temporary, until the rule-governed behaviour takes over. That is why the number of task opportunities to have that ABC contingency shaped is very important.

Apart from Reinforcement and Punishment, Extinction is another procedure that is significant to understand. Extinction is not the same a punishment. Extinction is non-delivery of the consequence, particularly no reinforcement is issued for previously reinforced behaviour, so that behaviour decreases until elimination. There are the phenomena of extinction burst and aggression caused by extinction, where the behaviour is not being reinforced and the learner tries to engage in the maladaptive behaviour in higher levels or intensity. There is also a possibility of a spontaneous recovery. Even if the maladaptive behaviour has been put into extinction, because of the learning history of the student and that the behaviour has been reinforced previously, the behaviour occurs again. Sometimes, we just have to be patient when putting the maladaptive behaviours into extinction. Also, because there are adverse effects of extinction, it is best to work with a Behaviour Analyst.

Always remember to think about the values and preference of the child or student and the family, and what is ethical in using any behaviour change procedures. This will guide your practice in Behaviour Analysis in Education.

MO + ABC or the Three-Term Contingency with the Learner in mind

In instructional or teaching settings, we cannot undermine the role of operant conditioning. Academic demands are issued if there are tasks to learn and skills to teach. In the application of Behaviour Analysis in Education, the use of ABC or the three-term contingency with Motivating Operations maintain the science of learning.

In teaching and learning, we must consider the content that is going to be taught and the manner or method by which we will teach, as both are part of the academic demands. As the application of Behaviour Analysis in Education sets the stage for new skills to teach, parents and caregivers, teachers and school staff, and professionals and paraprofessionals supporting the child must constantly reflect if the skills and tasks being taught or to be taught are just right for the child's ability.

Likely, if the task is too demanding, even if the child is motivated, the child may experience failure, find things overwhelming, be non-responsive to the task by exhibiting challenging behaviours and be off-task, try to escape or avoid the task, and likely find learning aversive (or something undesirable). To avoid these, task demands, both the content and method of teaching, must be constantly adjusted, even if this means taking a step back, in order to provide the optimal level for current functioning and use the child's strengths and gained skills to learn new skills.

If we are to reflect upon Vygotsky's (1978) Zone of Proximal Development (ZPD) in introducing and teaching new skills, we must give the child the experiences that are within that ZPD. This means scaffolding to ensure that children are encouraged to attend to the task and advance their skills (Vygotsky, 1978, p. 86). Putting this theory into Behaviour Analysis in Education, a continuous and thorough assessment of the child's current skill repertoire (his or her ZPD) should be done in order to provide scaffolds through prompting, shaping and reinforcement. These are all needed so that the students have the proper platform to achieve the task.

Prompting is a method to assist the learner in increasing the rate of responding with the goal of independent presentation of a skill or completion of a task. Shaping is using differential reinforcement of the learner's responses from successive approximation until the learner exhibits the correct response. In these two processes of scaffolding, it is imperative to understand the effects of the reinforcement to the demands of the task. As mentioned in the previous section, positive reinforcement is an important process in operant conditioning.

Reinforcers are the food (edibles), items or objects (tangibles), activities or actions, social praise and sensory items or activities that the learner prefers to be given (as in positive reinforcement) or taken away (as in negative reinforcement) are part of the reinforcement process. The reinforcement process manifests the objective of the 'AB because of C pragmatic philosophy or framework'.

The reinforcement issued is a **C**onsequence based on the learner's response (**B**) to the antecedent (**A**, stimuli or instruction). Reinforcement has an increased effect on the future frequency of behaviour. There are at least three important things we should know about reinforcement:

(1) it can increase positive responding or it can have a withdrawal or negative effect through escaping the situation and/or avoiding the task;

(2) it can be socially mediated [delivered by others] or automatic [occurs independent of others, commonly known as sensory, self-stimulatory behaviours or stereotypy]; and

(3) reinforcement largely depends on the learner's state of motivation.

All together, these three important things make the reinforcement process quite complex. In implementing the reinforcement process as the **C**onsequence to 'seal' or establish the **AB** relation and positively affect future responding, we must also reflect upon the demands of the task. Often, when one knows the task can be done because it is within his or her ability, *the motivation to accomplish it becomes strong*. When tasks are a little difficult, but we assist the learner to ensure success, *the motivation becomes stronger*. Through this you can create the best kind of learning environment as you operate through the ABC contingency to evoke or emit the desired behaviours or teach the skills.

Conclusion

Apart from the use of the MO and the teaching method of the operant conditioning, careful consideration of the task demands and the reinforcement process is necessary especially if our child or learner is exhibiting some off-task or inappropriate behaviours in the teaching and natural environments. Failure to reflect upon these will really affect the total experience of learning or in Vygotsky's terms, the child's ZPD. Your child or student is a unique individual, and your goal is, using motivation and operant conditioning for him or her to learn and make teaching effective.

References

Berk, L., & Winsler, A. (1995). *Scaffolding children's learning: Vygotsky and early childhood learning*. Washington, DC: National Association for Education of Young Children.

Boakes, Robert (1984). *From Darwin to behaviourism*. Cambridge: Cambridge University Press.

Cooper, J., Heron, T., Heward, W. (2007). Applied Behaviour Analysis (Second Edition).

Upper Saddle River, New Jersey: Pearson Education, Inc.

Heward, W.L., Heron, T.E., Neef, N.A., Peterson, S.M., Sainato, D.M., Cartledge,

G., Gardner, R., Peterson, L.D., Hersh, S.B. Dardig, J.C. (Eds, 2005). *Focuses on Behaviour Analysis on Education: Achievements, Challenges and Opportunities*. Upper Saddle River, NJ: Merrill/Prentice Hall.

Michael J. (2004). *Concepts and principles of behavior analysis* (Second Edition).

Kalamazoo, MI: Association for Behavior Analysis International.

Michael J. (2007). Motivating operations. In: Cooper J. O, Heron T. E, Heward W. L,

editors. Applied behavior analysis (Second Edition) NJ: Merrill Prentice Hall, 374–391.

Skinner, BF. (1954). The science of learning and art of teaching. *Harvard Educational Review*,24, 86-97.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes.* Cambridge, MA: Harvard University Press.

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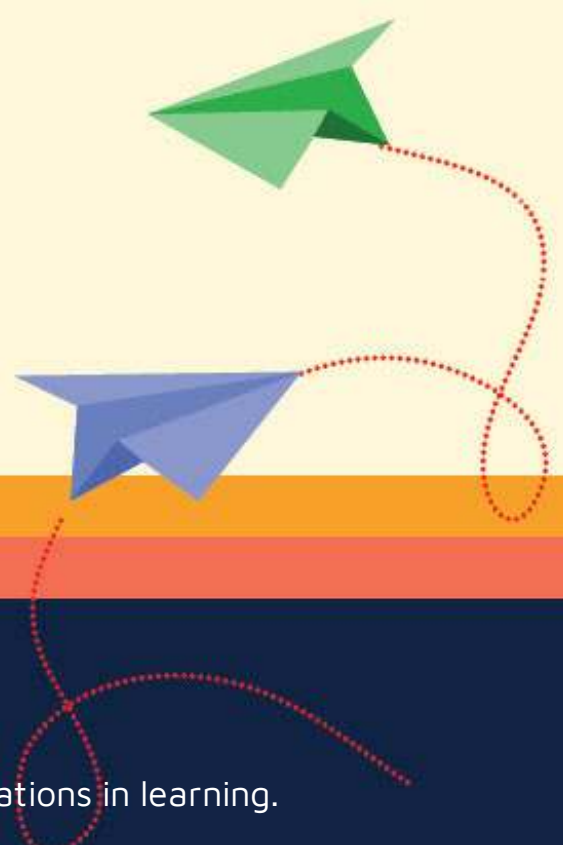
This e-book discusses the role of motivating operations in learning. Motivating operations either increases or decreases the value of the reinforcer and also alters the behaviour in a particular moment. Because drive, interests and desires are very powerful, we can use these to motivate our learners. In Behaviour Analysis in Education, as we use the operant conditioning in teaching skills and developing socially significant behaviours, the role of motivating operations cannot be undermined.

The book further discusses the operant or behavioural contingency of ABC or Antecedent - Behaviour - Consequence as the main principle of analysis in ABA. The kinds of consequences, reinforcement and punishment are also discussed. The book ends with the challenge to educators that as they use motivation as a springboard to learn, the use of behavioural tactics and strategies must take into consideration that optimal learning environment and the behaviour change tactics that will be utilized that will benefit the learner and the school community.