APIE + Behaviour Data for Teaching and Learning

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The application of Behaviour Analysis in Education imbibes the circular process of Assessment, Planning, Implementation of teaching and Evaluation of learning. The evaluation is quantifiable, supported by measurement and visual analysis of data collected during teaching. In this discussion we will highlight the important points in each phase.

The importance of Assessments in Applied Behaviour Analysis

Since Behaviour Analysis uses the principles of science to teach the skills needed and to arrive at the function or causes, or "why" a certain behaviour happens, assessment is the first important step in determining these. As systematic as possible, we use various forms of assessments:

1. Indirect Assessment through: (a) interviews with the child or learner (when possible), with parents and caregivers, with teachers and school staff and; (b) checklists, such as Likert scales. Some examples of the checklists used in school settings are The Child Behavior Checklist (CBCL) which is a component of the Achenbach System of Empirically Based Assessment (ASEBA) and Vineland Adaptive Behaviour Scale;
2. Direct Assessment through: (a) anecdotal observation such as ABC (Antecedent-Behaviour-Consequence) Recording of the behaviours within the natural environment setting, which is the preferred method in the application of Behaviour Analysis in Education and; (b) standardized tests that are usually administered by licensed psychologists.
3. Functional Analysis, which is the only Functional Behaviour Assessment (FBA) that tests and concludes through a confirmation of the hypothesis regarding the causal or functional relations between the behaviour and the variables in the environment. Note that a Functional Analysis is to be implemented with the Behaviour Analyst.

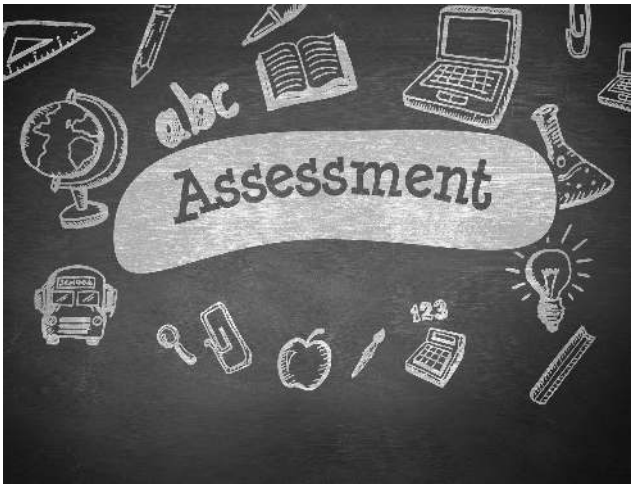
As mentioned, in Behaviour Analysis in Education, the most commonly used forms of assessments are the Indirect Assessments and the ABC or anecdotal recording as a direct assessment. However, whatever kind of assessment to be utilized, one must account the child or learner in mind, on all the phases of teaching and learning. This means that we use a systematic method in planning for instruction and teaching, the "view" of the child and the child as a learner in mind should be primary. What is the importance of highlighting the view of the child and the child as a learner, in mind? To many practitioners in ABA and in education, these two appear to be the same. In reality, these two states or roles have some differences although there are overlaps.

Often, when a child is enrolled in school to get access educational services, the structural mechanisms in education views the child as a learner, and forgets about the child as a person, as a human being, whose background and the social categories that consist of his or her identity are important parts of the child. To explain what is meant by this: we need to look into the formal attributes that make up a child's identity: sex or gender, age, culture and ethnicity, economic background and social status, language/s spoken and other intersections of the social categories that are part of the child as a person. By understanding these social categories and putting these as variables within the teaching and learning, we can account for the "positionally" or "situatedness" of the child as a person within the school system or learning environment, where is he or she is viewed as a "child as a learner", with difference to other learners and with a diverse background. Only through understanding these and including the social categories of the child's identities and the intersections of these, we can also fully understand and consider all competing contingencies. More significantly, if we are to consider education to be effective and make this a reality, then we must place in primary consideration, what is significant to this learner as a person. We should not use a structural lens to always-already, automatically view the child as a learner. This is also in line with the view of evidence-based practice which includes not only research and training but more significantly, the values and preferences of the learner and the family.

There was one Behaviour Analyst who have consulted with me about teaching the child to eat a variety of foods because of the limited kinds of food the child eats. Since the child needs to be "included" in the school system, as the child is of school age, the Behaviour Analyst and the paraprofessional have thought about the following foods as primary targets to teach: potatoes, cereal and bread. Through discrete trial teaching and inter-trial intervals, they prompted the child to take small pieces of each of these foods, while shaping and offering differential reinforcement. The teaching also used "first, then" or the Premack Principle, so that the child will eat the small pieces of new food first and then eat the food he likes (usually treats) or get to do what he wants at that moment. In this situation, the behaviour change procedures are, to a large extent, used properly. However, after about two weeks of teaching attempts and instruction, the data points still display flat. There is no increasing trend which means targets are not being learned. There is very high variability which means there are variables uncontrolled that affects the teaching, and the level is low, this means over-all, in comparison with other children who may have the same program being implemented, the child is not reaching optimum learning levels. When the Behaviour Analyst consulted with me, these are the first questions I asked: what is the child's or the family's cultural, ethnic and social background? Have you considered these in your planning and instruction? Well, the professional said that during intake assessment, the family self-identified as from Caribbean background. I further asked the Behaviour Analyst if he has asked the family, what kinds of food the family would eat or would prefer the child to learn to eat? Even if the child does not eat the food, the other family members eat, he or she may have had some exposure to them. The professional has spoken to the family, and the mother said, the family eats roti, plantain, breadfruit, rice and peas. There you go.

Much of the life skills and functional routines learned in school embrace culture as a way of life. I always say to colleagues, educators and practitioners, ABA do not tell us "what to teach", it helps us "how to teach". Gathering and accounting for the information about the learner as an individual should consider using an ecological assessment: the background of the individual and how this affects his or her interaction with the environment. If we are certain to consider these in our assessments, we are viewing the child as a human being or person who comes from a diverse background. Accounting for this variable helps us understand the view that as different children as learners entering and interacting with the school system, there are important factors to consider for recognition of differences as a criterion for inclusion and effective education. Inclusion does not mean standardization and linear assimilation; inclusion means the state and action of being a part of the group-herd such as the school as a structure but with the view that difference does not mean less. Difference is the driver for equal access to resources and opportunities, with the view of that each learner is a child with unique, cognate individuality.

While the purpose of the assessment is to identify behaviours or skills to increase and maladaptive behaviours to decrease, we cannot undermine the variable of culture and social categories of identity of the child or student to guide us to create and implement effective instruction. We ask ourselves: is there a relevance of the behaviour in natural environment settings? Will teaching of this behaviour grant some access to the child to functionally operate within his or her natural environment? What are the requirements or pre-requisites for this behaviour to be taught?



Planning: The importance of Research and Training

Once we have identified which behaviours to increase and which maladaptive behaviours to decrease or eliminate, (1) research on parallel forms of instruction to similar kinds of subjects or learners and (2) training of the staff should take place. It is the responsibility of teachers, behaviour analysts and other professionals working for and with the child and the family to look into what research says. To consult previous research and use the findings is an important pillar of evidence-based practice.

Applied Behaviour Analysis uses the main framework of operant conditioning of Skinner (1953, 1954) in our teaching. If we abide by the procedure of operant selection by consequences that requires that there should be a variation of the kinds of behaviours that would cause the best outcomes of survival and that would lead to adaptive repertoires, then there is no better place to look into but the research that has been done. This being said, if we look into what has been "tested and proven" in the past, it is likely that we may teach more effectively, the child will learn and we do not waste the time of the child and the resources of the family.

Training involves two things: (1) to gain professional competence, and that involves (2) ethical compliance.

Educators, Behaviour Analysts and other professionals working for and with the child must know how to teach. This is about being professionally competent. And by this, I mean, competence in all areas: from implementing how to motivate the child or learner, to antecedent intervention or doing preparatory acts for teaching, to delivering the lessons, implementing the consequences and most significantly, to measure and collect data. How would *you know if the child or student has made progress from A to B, when there is no data that is collected during teaching?* And it is not just about collecting data but collecting data properly. School performance reports in the form of report cards and mid-term assessments, as supported by data collection must be truthful accounts of the teaching and learning taking place or have taken place. An accurate measurement and data collection system is part of professional accountability. The learning activities that the child engages in are a part of his or her life. It is important that as we view the child as a person and as a learner, with respect, dignity and worth, we are to account for authenticity and transparency in the learning that takes place or has taken place through behaviour data.

Ethical compliance is a rule-governed behaviour that is expected from teachers, behaviour analysts and other professionals working with and for the child. While most of these professionals have their respective Code of Ethics, it is inherent to look into the Golden Rule: *Treat others as you would like others to treat you*. If you are the child or the learner or if the student is your own child, how would you like the treatment to be? Of course, you want to be treated rightfully, with value, dignity and worth. As you mirror yourself with the learner in that "educative encounter", as a professional and person, this Rule must govern you, at all times.

Implementation of teaching and Evaluation of learning through Behaviour Data Collection

Behaviour change procedures are salient to the application or practice of Behaviour Analysis in Education. Some of these are: (1) prompting, where the learner is prompted from most to least until he or she gets to evoke the behaviour or skill correctly and independently; (2) shaping, where the learner's response are differentially reinforced while he or she takes successive approximations of the correct response, and the teacher reinforces the response nearer or the same as the correct response; (3) differential reinforcement of behaviours as relevant to the target skill; (4) antecedent intervention or other preparatory acts, such as fading or decreasing levels of help, (5) use of "first, then" or the Premack Principle, i.e., first you write your name, and then you can play with the spinner; (6) Token Economy or contingency contracting, the accumulation of some tokens or points in every accomplishment and then exchange earned tokens with preferred back-up reinforcers, among many others. The next section of the course will deal with these behaviour change procedures.

What we should highlight, though, is that prior to or during teaching, we must do the systematic manipulation of variables in environment in order to measure and ensure effective teaching and learning to take place. Through behaviour data collection, using ABC Data collection, discrete trial teaching and natural environment teaching or training as the most common forms of teaching in Behaviour Analysis in Education, we are also to gauge if access to effective education is becoming a reality.

Conclusion

The processes and phases involved in Assessment, Planning, Implementation of teaching and Evaluation of learning are significant, and it is a never-ending process: behaviours happen moment to moment, day by day. Why are all phases of the A PIE important? (1) it provides significant scientific evidence to ensure quality and individualized instruction, that suits the learner's strengths and needs; (2) we ground the objectivity embedded in A PIE as a process in neutrality and progress, to really to benefit the learner, the family, and the educators in the school systems; and (3) the resources are maximized and time is optimized because there is a continuous and sequentially systematic method in place. **References**

References

Achenbach, T.M., & Rescorla, L.A. (2001). *Manual for the ASEBA School -Age Forms & Profiles*. Burlington, VT

Baer, D., Wolf, M. & Risley, T. (1968). Some Current Dimensions of Applied Behaviour Analysis. *Journal of Applied Behaviour Analysis*, 1968 (Spring), 91-97.

Bailey, J. & Burch, M. (2016). *Ethics for Behavior Analysts* (Third Edition). New York: Routledge, Taylor & Francis Group.

Cooper, J., Heron, T., Heward, W. (2007). *Applied Behaviour Analysis* (Second Education). Upper Saddle River, New Jersey: Pearson Education, Inc.

Heron, W. T., & Skinner, B. F. (1939). An apparatus for the study of animal behavior. *The Psychological Record*, 3, 166-176

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.

Skinner, BF. (1953): *Science and Human Behaviour*. Cambridge, MA: BF Skinner Foundation.

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

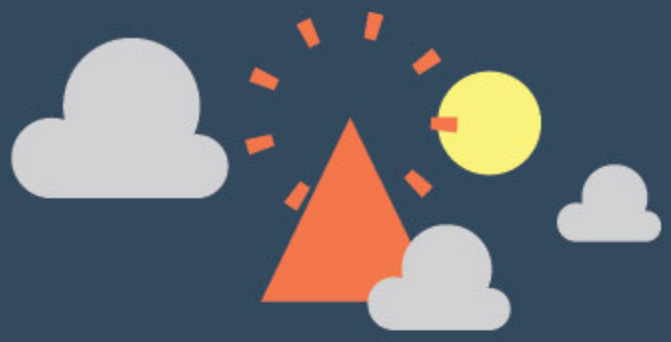
24, 86-97.

Sparrow, S. S., & Cicchetti, D. V. (1989). *The Vineland Adaptive Behavior Scales.* In C. S.

Newmark (Ed.), *Major psychological assessment instruments, Vol. 2* (p. 199–231). New York: Allyn & Bacon.

Sulzer-Azaroff, B., & Mayer, G. R. (1991). *Behavior analysis for lasting change* (Third Edition).

New York: Sloan Publishing.



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