

# A Comparison of Skinner's Concept of Behaviourism and Bruner's Concept of Cognitivism: Exploration of Application on Intervention to Address Autism

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## Abstract

**This essay mainly contrasts and combines Skinner's theory of behaviorism and Bruner's theory of cognitivism, and then integrates them into the intervention of autistic children. First of all, this article contrasts Bruner and Skinner theory from 4 aspects, such as the key concepts, learning view, teaching view and the measurement. Skinner believed that the four points are from external strengthening and stimulation, but Bruner believed that learning motivation and conditions are from the internal awareness and awareness, and knowledge and requirements are objective principles. Moreover, this article analyses the relationship and finally found they are complementary. In addition, this article focuses on the intervention of autistic children. To begin with, I describe the characteristics of autism in cognitive level and behavioral level. Then, this essay focus on the intervention of autistic children. Skinner's verbal behavior and ABA make a great contribution to autism.**

## Keywords

**Behaviorism; Cognitivism; Intervention; Autism.**

## 1. Introduction

### 1.1. Background

As is know to all, learning theory is a foundation for conducting education. Educational psychology provides principles to understand and treat students with learning disabilities, to facilitate the development of talented students and prosocial behaviours of adolescents, and to develop effective learning environment (NASP 2008). Learning has been defined in numerous ways by many different theorists, researchers and educational practitioners. Although universal agreement on any single definition is nonexistent, many definitions employ common elements (Ertmer & Newby, 1993). Shuell (1986) defined that learning is a persistent process of changing behaviours and make behaviours more prevail after long experience in the behaviouristic view. Schunk (1996) interpreted Shuell's definition: "Learning is an enduring change in behavior, or in the capacity to behave in a given fashion, which results from practice or other forms of experience" (Schunk, 1996, p.2).

Learning theories are a source of verified instructional strategies, tactics, and techniques. Knowledge of a variety of such strategies is critical when attempting to select an effective prescription for overcoming a given instructional problem (Ertmer & Newby, 1993). There are various theoretical perspectives in educational psychology, such as behaviourism, cognitivism and constructivism. Learning theories typically are divided into two categories—behavioral and cognitive (e.g., Bednar et al., 1991; Duffy & Jonassen, 1991). Both of cognitivism and behaviorism emphasize the role that environmental conditions play in facilitating learning. Instructional explanations, demonstrations, illustrative examples and matched non-examples

are all considered to be instrumental in guiding student learning. Similarly, emphasis is placed on the role of practice with corrective feedback. Up to this point, little difference can be detected between these two theories. However, the “active” nature of the learner is perceived quite differently (Ertmer & Newby, 1993). Cognitive approach focuses on the mental activities of the learner that lead up to a response and acknowledges the processes of mental planning, goal-setting, and organizational strategies (Shuell, 1986). Behaviourism focuses on the stimulation of environment. Learner is characterized as being reactive to conditions in the environment as opposed to taking an active role in discovering the environment (Ertmer & Newby, 1993). Based on the “active” difference, I choose behaviorism to compare with cognitivism.

Moreover, during the late 1950s and early 1960s, the perspective of psychology transferred from behaviorism to cognitivism, which is called cognitive revolution. It was publicly initiated at Harvard in the 1960s by J.S. Bruner and George Miller (Harré, 1992). Cognitive revolution is generally believed that psychology has made a contribution that changes psychological paradigm, which is from behaviourism to cognitivism (Hergenhahn & Henley, 2013). When one thinks of that the shift away from behaviourism to study of cognition, it is to the group at the Center for Cognitive Studies that one’s mind turn (Harré, 1992). However, cognitive revolution has profoundly influenced subsequent psychologists’ views on behaviourism (Hergenhahn & Henley, 2013). Some later cognitivists believed that the cognitivism constituted a paradigm shift, but many scholars have doubted whether cognitive psychology links to behaviorism (Li & Hao, 2015). From 1950 to 1980, Skinner had been a leader of psychology in behaviourism (Lachman et al., 1979). However, Bruner (1957) is one of the pioneers of cognitive psychology and made significant contributions to learning theory. He proposed ‘discovery learning’ and stated that learning is not only knowing the information given (Bruner, 1961). I am interested in Bruner and Skinner, so I choose their perspectives to argue. Besides, behaviourism has a lot of applications, such as the intervention to address autism, which is I am interested in.

## 1.2. Outline and Aims

In the following section, this essay is expected to compare the differences between the two learning theories from different aspects, such as the key concepts, learning view, teaching view and the measurement. Thirdly, this essay will discuss the complementarity between behaviourism and cognitivism. Moreover, I would like to critically discuss the advantages and disadvantages of both learning theories. In addition, I will give an appliance about autism, which includes cognitive defects and behavioral defects as well as give the intervention that follows Skinner’s behaviorist theory to address autism. At the end of this essay, the conclusion is drawn.

The aim of this essay are (a) to compare two theories (b) to explore which theory is most helpful in thinking about how pupils learn (c) to discuss whether it is useful to autism. Through comparing behaviorism and cognitivism, we could have a better understanding of it. Moreover, we could rethink how to take advantage of behaviorism in the intervention of autism.

## 2. The Differences Between the Behaviorism and Cognitivism

There are a lot of similarities and differences between behaviorism and cognitivism. In this section, I will focus on exploring the main divergences between Skinner’s behaviorism and Bruner’s cognitivism.

### 2.1. Key Concepts

The first difference between behaviorism and cognitivism are the main concepts. First of all, behaviorism focuses on the behavior, while cognitivism pays more attention to the consciousness (Csikszentmihalyi, 2014).

On the ontological level, from its root, the term behaviorism gave an “introduction for sociology research that would permit control and estimation of each applicable variable by ignoring human thought or appreciation” (Lee 2016). Skinner (1974) believed that consciousness exists in human’s behavior and proposed a lot of behavioral theories of learning. Conscious action is a self-sufficient subject but it is not an internal mental event or external manifestation of psychological structure. Behavior is the first thing and the second is consciousness. Skinner agreed with self-observation and self-awareness, as a result of they can also be observed, described and analyzed objectively by individuals (Skinner, 1974), although self-observation and self-awareness are not intrinsically different from the external behavior (Li & Hao, 2015). Skinner (1974) believed that cognitivism has ruled Western philosophy since the beginning of Plato, so cognitivism mistakenly believed that thought is an independent entity. The main point of Skinner's behaviorism is that psychology should not research consciousness and it should just research behavior, while consciousness should be completely opposed. Skinner passed on no vitality for perceiving how the human character functioned. Skinner's point of view in verbal behavior proved the existence of behavior. Skinner firmly opposed that speech action is caused by consciousness, and the function of language is not used to express it (Skinner, 1957). Skinner acknowledged that everything people do is controlled by their experience. Thusly, the "mind" (not the cerebrum) had nothing to do with how people acted (Ertmer & Newby 2013). Besides, considerations, emotions, targets, mental system, and all such things have little impact to what people do (Skinner, 1974). There are only observable direct or indirect behaviors. Thus, behavior is the existence of a medium that requires individuals to produce an effect in the environment, and behavior is conditioned by the environment (Li & Hao, 2015). Therefore, the behavior is an exist that can be controlled and predicted.

Cognitivism agrees with behaviorism that behaviour is important in promoting learning and stresses the importance of instructional components which include explanations, demonstration, illustrative examples and so on (Ertmer & Newby 2013). However, these factors cannot explain all the learning process of cognitivism. There are many other essential elements that consist of learners’ thoughts, beliefs, attitudes values (Winne 1985). contrary to Skinner's radical behaviorism, Bruner found the relationship between consciousness and behavior within cognitivism, and made a lot of cognitive theories of learning. Bruner thought it should focus more on learners' mental thought (Winne 1985). The previous acquired performance constitutes the necessary internal conditions for learning. These internal conditions play a role through a set of transformation processes. The external behavior and environment is only to provide the potential to stimulate. As whether these stimuli are noted depend on the psychological structure of the learner (Bruner, 1966). In Bruner's view, although the psychological development of students is affected by the external behaviour, their own unique understanding and attitude play a more significant role (Bruner, 1957). Students’ learning attitudes would have great impact on their learning results. For example, Students are told to learn painting. If they show interest on painting, they may be more easily to master the skills of drawing. In the contrast, they would feel difficult to learn without interest.

## 2.2. Learning View

The second difference between behaviorism and cognitivism is the learning view. Skinner argued that students should be passive accept knowledge (Shulman, 1987). However, according to Bruner ‘s learning theory, students are not passive knowledge recipients, but positive information processors (Bruner, 2009). Besides, Skinner (1957) proposed stimulus-response-reinforcement theory and Bruner (1961) came up with the “discovery learning” theory.

In terms of behaviorism, the learner is considered as a responder to conditions in the environment. The reinforcement of expected learning behaviors can mold the learner’s

behavior (Jonassen, 1991). Behaviorists begin by displaying lower-level subjective aptitudes (Jonassen, 1991). For example, the learner is asked to answer a question. After he has given this information, he is simply told that his answer is correct or wrong. The driving force of students' learning comes from outside reinforcement. Learners can know and understand the information by observable stimulus and following responses (Bichelmeyer & Hsu 1999). Furthermore, Skinner argued that learners only play a role in presenting the proper verbal behavior, rather than decide the contents of learning and the ways of explaining, adopting useful information. Learners do not have any chance to evaluate or give their reflection in the learning process, they are simply told what is right or wrong. In other words, there is no subjective element in learning process (Boghossian, 2006).

In Bruner's view, although the psychological development of students is affected by the external behaviour, their own unique understanding and attitude play a more significant role (Bruner, 1957). Bruner (1961) held the belief that learners are considered as scientific reasoners, and are able to construct their own comprehension of the world by organizing and classifying acquired information. In this case, learners' approach and attitude to discover is of great significance in learning (Upham et al. 2013). Besides, Bruner stressed that students can complete the study independently and find hidden knowledge (Spiro, 1992). In cognitivism learning, the learning process is to associate the new acquired information with the structure of intrinsic cognition. Students are expected to complete the study independently and find hidden knowledge (Bruner, 1960). Bruner (1960) suggested that learners are positive information processors in cognitivism rather than simply passive information recipients in behaviorism. Students discover the new knowledge and study by themselves and they can promote their own intelligence or cognitive levels by acquiring knowledge positively.

Besides, Skinner (1957) proposed stimulus-response-reinforcement theory. Skinner did wide research with animals and composed the prevalent Skinner box. The content was about putting the hungry rat into the Skinner box and letting the rat learn the react of pressing the lever. The rats set feet on the lever occasionally and a piece of food rolled into the plate, so the rats ate food. Once again setting feet on the lever, the rat would eat food. Then, after the rat repeated and reinforced for several times, the reflection conditions would be formatted. If food were stopped supplying, the reflection of the rat would subside (Zhao et al. 2016; Skinner, 1992). Similarly, Skinner (1935) defined the learning process as stimulus-response-reinforcement by using the external term of operant conditioning. Operant conditioning is the learning process that intentional behaviors become more frequent or weak because of the consequences (Chopra, 2008). Learning has nothing with internal mental process. The external reinforcement is the most critical factor in successful learning (Ertmer & Newby 2013). For instance, when students get good grades in the exam, the teacher will give them verbal praise. On the contrary, the teacher will stop rewards even make punishment, if students fail in the exam. The positive reinforcement of this behavior is the frequent verbal praise. The negative reinforcement is stopping rewards or making punishment on the students by the teacher. Therefore, teacher plays more important role in students' learning process and students are acquired knowledge. However, Bruner (1957) put forward the "discovery learning" theory. Discovery learning requires learners to discover concepts and procedures that might otherwise be communicated by direct instruction (Bruner, 1959). Indeed, Bruner (1966, p. 101) commented that discovery learning is "... the most inefficient technique possible for regaining what has been gathered over a long period of time ..." However, it is still supported by many teachers and educational writers (Maor & Taylor, 1995). Moreover, he supports the idea of discovery learning and thinks that the process of discovering instructs people to acquire knowledge and solve problems in an easily way (Bruner, 1961) and he (1957) believed that discovery is not limited to pursuit of something people don't know, but people should acquire knowledge by using their minds, thus stimulating students study energetically.

### 2.3. Teaching View

Behaviorist theoretical structure characterized the foundation of teacher-centered education (Yilmaz 2011). However, in cognitive theory, teachers usually try to make information meaningful and assist learners to structure and associate new knowledge with existing information in memory (Yilmaz 2011).

In terms of behaviourism, Behaviorists think that teachers play a leading role in changing students' behaviors (Ertmer & Newby, 2013). Teachers are the designers and organizers in the learning process and play a more important role in students' learning process. They always take control of the whole class, and evaluate the learning process whether it is right or wrong. Teachers apply the approach of indoctrination in teaching, and must be anticipated to use positive or negative reinforcement in order to get the accurate results (Jarvis et al., 2003). In a school setting, instructors use positive and negative fortresses to either compensate or repel an understudy's quick. The behaviorist learning hypothesis relies on upon outward partners, for instance, assessments, prizes, and benefits, and what's more attestations and affirmations, as an approach to manage ensure the replication of the informed progression or lead. Teachers who took after the behaviorist learning speculation would indicate lesson focuses in a straight edge. Thusly, the teacher would give implications or signs to guide understudies to a pined for lead, and a short traverse later use results to fortify the pined for direct. Although Skinner regarded it is a special kind of stimulus, he basically ignored the learners' awareness of the role of learning (Ertmer & Newby, 2013). Skinner advocated teachers should assess learners where the instruction should begin. However, in Skinner's behaviorism, the key of learning is how teachers could arrange feedback in a particular environment and its consequences (Skinner, 1963).

However, in the cognitive view, Bruner (1960) believed that teachers have to play a role in guiding students by exploring actively and solving problems for the purpose of improving teaching efficiency. He also thought that the primary responsibility of educational systems is to teach students how to learn and discover (Bruner, 1961). Bruner believed that the ultimate goal of learning any subject is to build a good cognitive structure of the student (Bruner, 2009). Therefore, the teacher should understand the constituent elements of the cognitive structure of the student to be constructed. On this basis, the teacher should take effective measures to help the students acquire, transform and evaluate the knowledge, so that the knowledge structure of the subject is transformed into the student's cognition structure (Bruner, 2009).

### 2.4. Measurement

Behaviorists put emphasis on research overt behaviors that can be observed and measured (Good & Brophy 1990). Cognitivists like Bruner are more concerned about the acquisition of knowledge though different measurement, such as tests or exams (Bruner, 1957).

From the analysis of behaviorism above, behaviorists usually take the behavior that followed by environmental stimulus as the response, and believe that all the behaviors are made by learning (Yilmaz 2011). Therefore, they observe learners' response to the stimulus in order to find out which reinforcement can get the most effective result and the highest degree of teaching (Ertmer & Newby 2013). For instance, teachers often observe the students' response to know the degree of students' mastery of knowledge. They can also get a feedback whether they adopt the appropriate guiding style for students' behaviors.

In terms of cognitivism, cognitivists observe the learners' tendency to learning through the learning process. After cognitivist instruction, the learners can learn the mode of thinking, namely cognitive structure. Cognitivists examine the learners how to arrange instruction that it can be easily integrated by tests or exams (Ertmer & Newby 2013). In educational practice, teachers usually set up homework or examinations to check whether students have mastered the knowledge that learnt in class, which contributes to their further teaching quality.

There are different essential sections required near to difficulties to both theories. In any case, it is conceivable that these cases might be examined yet solidified in a gathering of courses with no institutionalization (Kwan and Wong 2015). There are such a combination of variables fused that this sensible trade appears to tumble to the decision of individual instructors, and may, truly, proceed with thusly as educators look toward the unavoidable predetermination of edifying advancement coordination.

### 3. The Complementarity Between Behaviorism and Cognitivism

Skinner argued that learning is the link between stimulus and response, and the basic assumption is that behavior is the response of learners to environmental stimuli. He regarded the environment as a stimulus and the accompanying organism acts as a reaction and believed that all actions can be learned (Chomsky, 1959). The application of behavioral learning theory requires teachers to master the methods of shaping and correcting student behavior and creating an environment for students to maximize the need to strengthen the appropriate behavior, while eliminate the inappropriate behavior (Rothschild, 1981).

However, in Bruner's view, although the psychological development of students is influenced by the environment. They rely more on their own unique understanding. Teaching is to help or form a student's wisdom or cognitive growth. In his view, the task of educators is to transform knowledge into a form of student who is adapting to the development, and to characterize the order of system development, as a model of instructional design. Whereby he advocated the use of methods of finding learning (Bruner, 1966).

Behaviorism is concerned with the external environment of the conditions of stimulation, in order to improve the efficiency of learning. However, cognitivism focuses on the acceptance of internal information and processing (Ertmer, 1993). It should be said that the two initial psychological studies generate two opposing studies. With the development of the times today, behaviorism and cognitivism are more tended to the integration, because the change of cognition should care about the impact of the environment, and ultimately be reflected in the external behavior (Linehan, 1993). On the other hand, the change of external behavior can not be separated from the processing of inner cognition. Therefore, individual subjective or environmental impact could not be ignored in educational psychology.

### 4. The Advantages and Disadvantages of Behaviourism and Cognitivism

Behaviorist and cognitivist learning theories have a great importance in educational psychology. However, both of them have many limitations in learning process, which needs to be analyzed.

#### 4.1. Behaviourism

Behaviorism is a very important method in teaching around 1950 (Ertmer & Newby 2013), and provides a dominant theoretical foundation of curriculum development and practice in school. The behavioral approach was focused on the observable and measurable behaviors of learners and teachers by the stimulus-response-reinforcement theory. It can improve the mastery of professional knowledge efficiently (knowing what). In addition, behaviorist helps teacher concentrate on students' personalities and educate students effectively (ibid.).

However, there are many limitations in behaviorist theories. Firstly, it does not study the mental process in the mind (Yilmaz, 2011). Behaviorists tend to overlook the learners' background and psychological activity and the behaviorist psychological principles did not take the radical distinction between human learning and animal learning (Amsel 1992). For Skinner (1957), he denied the influence of consciousness on ontological level. Teachers simply impart the same knowledge to every student. Due to the different educational backgrounds, learners

have abilities of mastering knowledge at different levels. Teachers should think of their internal factors and modify teaching methods to suit students' special requirements, such as listening to students' learning feedback in the mind (Boghossian 2006). Besides, the learners play passive roles in the process of learning and are manipulated by teachers. They may not make the response actively when they find that the stimulus for the right response does not appear, which would have a negative effect on learning outcomes (Ertmer & Newby 2013). Then, as far as I am concerned, there are also many limitations in the behavioral measurement. Observation is a subjective measurement of which the result may be affected by observers' consciousness. In addition, people's sensory organs have physical limitations. Observers can only observe the external situation instead of people's thinking and consciousness.

## 4.2. Cognitivism

Cognitivism by Bruner, different from behaviorism, places emphasis on the result of interaction between external stimulus and internal mental process of cognitive subject. Learners make active and selective response to the environmental stimulus according to their own conditions such as their interest, needs and previous experiences. They can master the knowledge structure and subject contents by cognitive teaching methods, which is beneficial to the learning and thinking abilities of learners. Besides, discovery learning has some advantages. For example, the active participation in the learning process by the child might result in the following hypothesized benefits: an increase in intellectual potency so as to make the acquired information more readily viable in problem solving, the enactment of the learning activities in terms of the intrinsic reward of discovery itself (as contrasted with the drive-reduction model of learning), learning the heuristics of discovery, and making material more readily accessible in memory (Bruner, 1986).

However, cognitivism still does not pay much attention to the non-intelligence factors of learners, such as their emotions and will (Guey et al. 2010). The influence of factors on the learning process should not be neglected. Learning process need to rely on learners' mental structures which insists of intelligence and non-intelligence elements for desired learning purpose. In addition, Bruner (1961) overemphasized discovery learning of students and neglect the guiding function of teachers to some extent, which may bring about a few problems. Totally independent discovery learning does not exist actually. The interplay and complementarity between discovery and reception learning is important for effective learning (ibid.). In my opinion, although cognitive methods of assessment, such as exams and homework are effective, they have a few limitations. The homework and exams are arranged by teachers, which may be subjective and not representative. For instance, students' mental and physical situation would make a difference to their results of assessment.

## 5. Exploration of Application on Intervention to Address Autism

### 5.1. The Introduction of Autism

Autism is a set of heterogeneous neurodevelopmental conditions, characterized by early-onset difficulties in social communication and unusually restricted, repetitive behaviour and interests. The worldwide population prevalence is about 1%. Autism affects more male than female individuals, and comorbidity is common (>70% have concurrent conditions) (Lai & Baron, 2014). Over the past decade, there has been a marked increase in the number of students identified with autism in the United States. For example, in the state of Maine, special education identification of students with autism has increased steadily from 158 in 1995 to 1,255 in 2004, representing a nearly 800% increase over the past decade (Maine Department of Education, 2005). Individuals with autism have atypical cognitive profiles, such as impaired social cognition and social perception, executive dysfunction, and atypical perceptual and information

processing (Lai & Baron, 2014). Besides, milestones in language and social communication play a major role at almost every point in development. However, for children autism spectrum disorder (ASD) a defining characteristic of the disability is difficulty with social communication across contexts (Mohammadzahari, 2014). Autism spectrum disorders are defined by difficulties across a range of areas: social and communication difficulties and restricted and repetitive behaviours and interests. It has been suggested that this triad of symptoms cannot be explained by a single cause at the genetic, neural or cognitive level (Brunsdon et al., 2014). However, in the study of autism, three levels in particular are useful: the biological, the cognitive and the behavioural. It is important to keep these levels distinct, because each of the three levels does a different job in our understanding of autism (Happé, 1995), but in this essay, I will focus on the cognitive and behavioural level of autism.

## 5.2. Cognitive Level

Compared with the "normal children", autistic children have a lot of defects in the cognitive aspects, but there are some different levels of defects in different individuals (Zhang, 2007). In general, autism has a specific disorder: although some cognitive functions are impaired, it still retains some other features, which are even very outstanding. Some autistic children have a so-called "islets of ability", such as good mechanical memory, puzzle skills, calendar calculations, painting, music and so on (Zhang, 2007). These extraordinary skills in autistic children is much higher than in other barriers, but they usually can not explain their skills, and the application of these skills has a great range of restrictions (Wilcox et al., 2002).

However, there are three cognitive theories, which are widely used to research the cognitive process of children with autism: (theory of mind, TOM) defect, (central coherence) deficiency, (executive function) defect (Zhang, 2007). (1) TOM ability is an individual's ability, which makes a causal explanation and prediction of the psychological behavior, such as needs, beliefs, intentions and feelings, thus it is deemed to be social cognition and the basis of interpersonal communication (Qiu, 2005). Most of research suggested that the TOM capacity of autistic children have some defects and they can not speculate other's thinking, and thus show some special obstacles in interpersonal communication, imagination, and language (Zhang, 2007). For example, some autistic children are more likely to use direct requests in free talk and rarely use indirect requests. (2) Central coherence theory (Frith, U., 1989. *Autism: Explaining the Enigma*. Blackwell, Oxford.) is addressed by exploring linguistic processing in normally intelligent adults with either autism or Asperger syndrome, to test whether local coherence is impaired. The result showed that individuals with an autism spectrum condition were less likely to use the sentence context spontaneously to provide the context-appropriate pronunciation of a homograph (Jolliffe & Baron-Cohen, 1999). Because autistic children often lack of attention to the overall context, their attention and understanding would concentrate on the part of context rather than the total context. (3) Executive function is an umbrella term for functions such as planning, working memory, impulse control, inhibition, and shifting set, as well as for the initiation and monitoring of action (Hill, 2004), so it is a central cognitive deficit of autism (Ozonoff, 1997). It shows the model conversion and planning defects, and it is related to repetition and stereotyped behavior as well as the root causes of TOM defects (Griffith et al., 1999). Autism Neurobehavior theory also agrees with the above view that autism is a control mechanism of attention, sensory and perceptual abilities, such as the executive function (Klin et al., 2002).

## 5.3. Behavioral Level

In terms of behavioral level, there are 4 aspects of psychological behavioral characteristics of autistic children, but not all autistic children have these problems (Wang, 2007). (1) Language development is slow. The language skills are different in different individuals. For example, it is about 50% of autistic children that do not have the ability to communicate. However, some



children, who have the language behavior, often imitate and repeat other's behavior and language. (2) Because the autistic children are lack of some interests, such as society, peer groups as well as attachment with their parents, they can not express their affection. (3) Interests and behaviors of autistic children are abnormal. Autistic children often have recurrent behavior, which contains the concept of obsessive-compulsive disorder. (4) Autistic children have the disturbance of perception and kinesipathy. Many children with autism have obvious perceptual disturbances. For instance, some are too slow of sensory stimulation, but others are very sensitive (Wang, 2007).

#### 5.4. The Intervention of Autism

Concerning about the history of autism treatment and intervention since more than half a century, people have realized that language problems are the core issues of behavioral interventions for autistic children (Schopler & Mesibov, 1985). Bruner (1977) clarified dialect advancement, and especially the dominance of pragmatics, as a component of the exchange and incessant social cooperation that happens amongst guardians and youngsters. As per the intelligent introduction of dialect improvement, this exchange and cooperation enable children to comprehend the way of dialect and its tenets of use (Schopler and Mesibov 2013). Similarly, the behavioral model, then again, depends on Skinner's (1957) views that dialect should be specifically molded and fortified. Skinner (1957) introduced his perspective of dialect advancement therefore of fortified reactions, first propelled by endorsement for verbalizations and later by regular results for the fitting utilization of dialect.

Behavioral methodologies depend on the hypothesis of Skinner (1957) who thought learning is an improvement, and all conduct is found out. Utilizing affiliated learning and operant molding, behavioral reactions can be changed by positive and negative fortification. This approach was created on the hypothetical premise that people with an autism were thought to be unequipped for reacting to the ordinary condition since they had not educated the practices of normally creating kids. In this way, it was important for the natural contribution to be changed to condition behavioral reactions (Schopler and Mesibov 2013).

Skinner (1957) defined verbal behavior as behavior that is reinforced through the mediation of another person's behavior (whereas nonverbal behavior is reinforced directly through contact with the physical environment) (pp. 1-2). Skinner insisted on studying the language from observable external behavior and believing that the nature of linguistic behavior is an operation that speaks to act on the environment which has an effect on the speaker in turn (Skinner, 1957). Constituting the external environment stimulus of linguistic behavior is mainly reflected in the strengthening and punishment (such as imposing some adverse results or prospects) and negative punishment. Skinner has made clear decisions and categorization of language operations and used it as a basic unit of speech action to ensure the functional analysis, behavior prediction, and control of complex speech behavior possible (Skinner, 1957).

According to the environmental variables that control speech behavior and the consequences that it triggers, Skinner (1957) divided speech behaviors into seven basic types. (a) The first type is causative behavior, which is a speech reaction controlled by environmental variables such as deprivation. The object is directly related to environmental variables. For example, Children do not drink water for a long time, causing their execution to say "water", which is reinforced by water (Skinner, 1957). (b) The second type is alleged behavior, which refers to acts that are caused by nonverbal stimuli, such as children seeing chairs and saying "this is a chair" (Skinner, 1957). (c) The third one is echo imitation behavior, which means that the speaker repeats or mimics the behavior of another person's words, which is triggered by speech stimulation control (Skinner, 1957). (d) The forth one is in-speech behavior that enable the speaker to talk about things that are not in front. It is also triggered by speech stimulation control (Skinner, 1957). (e) The fifth one is textual behavior, which is triggered by a written

speech stimulus control, such as seeing the word "apple", and the child speaks the word "apple" (Skinner, 1957). (f) The sixth type is spelling behavior, which is stimulated by speech stimulation. For example, if someone asks children to spell out the word "pencil", children will respond with "p-e-n-c-i-l" behavior (Skinner, 1957). (g) The final one is nonverbal behavior, which refers to the speech stimulation. The actor did not use language but with non-verbal behavior to respond to this situation. For example, when the mother asked the child "Are you hungry? ". The child responds with nodding, so the "nodding" of such nonverbal acts is also treated as an analytical unit of speech act (Sundberg & Partington, 2013).

Besides, the most commonly employed and empirically supported interventions of autism have been based on the principles of applied behavioral analysis (ABA), a scientific approach to understanding behavior, and how it is affected by the environment (Reichow and Volkmar, 2010; Reichow and Wolery, 2009). Application Behavior Analysis is based on the conditions proposed by Skinner's operating principle and established a science. The purpose is to assess people's behavior and intervene and correct the "abnormal" behavior (Ringdahl et al., 2009). According to Skinner, the conditional manipulation refers to the process of shaping the behavior of the individual in the interaction of environment and behavior (Skinner, 1953). The techniques of ABA are effective in altering the developmental trajectory of some very young children with autism. This research suggests that early, intensive treatment using the methods of ABA enables a significant number of children to enter the educational mainstream and achieve normal intellectual functioning (Harris & Delmolino, 2002).

However, ABA have some disadvantages that lead autistic children to overtreatment and "mechanical" development (Metz, 2005). For example, the idea of ABA training gives children a reason to do something. Autistic children perform a behaviour that will get some responses, such as the other's facial changes, hugs or appreciation, and may be some food or an opportunity for action (Smith, 2001). Children learn a behavior and others reward them, but they maybe do not know why he should do that? What is the meaning? They just know that this behavior will be reward when they do it. Practicing for a long time without reward, they will be done step by step. Each behavior in their subconscious will correspond to a directive or a need to do things. These stereotypes will contain their creativity (Metz, 2005).

## 6. Conclusion

Through the above comparison of Skinner's behaviourism and Bruner's cognitivism, as far as I am concerned, cognitive learning theory is more beneficial to some students who could study independently, but behavioral learning theory is more suitable for autistic children. Cognitivism advocates students' autonomous learning and teacher's enlightening teaching, which could stimulate students' potential and innovation ability. Similarly, this is a more advanced learning theory, which is more suitable for the current educational system. However, for autistic children, behavioral learning theory is even more effective than cognitivism. Behaviourism stimulates learner's behavior through the external stimuli and autistic children are unable to have self-learning, so through the external stimulus, they could achieve the purpose of learning (Li & Hao, 2015).

In the end of this essay, there are still many shortcomings in this paper. (a) The research method of this paper is single, and this essay needs more quantitative and qualitative research methods to support the viewpoint. (b) The contrast Skinner's behaviorism and Bruner's theory of cognition is not comprehensive, just a rough comparison. (c) For the intervention of autism, cognitive intervention is not comprehensive, thus cognitivism and behaviorism is imbalanced in the application part. (d) This article does not make a critical thinking about the behavioral and cognitivist views, and there is no clear assessment of the pros and cons. (e) Finally, the

language description of this article is not smooth and clear. I will continue to study the theory of learning and apply it to practice in the future.

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