THEORETICAL IMPLICATION TO THE SUSTAINABILITY OF HOME GROWN SCHOOL FEEDING PROGRAMME IN NIGERIA: THE PERSPECTIVE OF CLASSICAL CONDITIONING THEORY AND THE THEORY OF CONNECTIONISM

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Abstract

The Nigerian homegrown school feeding programme which was first introduced in 2005 was not sustained beyond its incubation period except for Osun and Kano States. It was reintroduced again in 2015 but could not be sustained. However, after its introduction in 2016, it has been going on in several states but many states are yet to domestic the programme. Besides, the federal government of Nigeria stopped it for a while after the corona virus lockdown. Thus, this work focused on theoretical Implication to the sustainability of homegrown school feeding programme in Nigeria: The perspective of classical conditioning theory and the theory of connectionism. Considering the relevance of classical conditioning theory and the theory of connectionism, this work tried to use the two theories to explain how they could help the federal government and the state government in particular to domestic and sustain the programme. Each theory was vividly explicated and their respective implications relating to how it can be used to sustain homegrown school feeding programme were provided.

Keywords: Classical Conditioning Theory, Sustainability, Homegrown and School Feeding Programme

Introduction

The extent to which the aims and objectives of basic education can be reasonably achieved may be dependent on the availability of certain interventions in that level of education. And one of such very critical interventions is the homegrown school feeding programme. This assumption is predicated on two major premises. First, food constitutes one of the basic needs of humans and it tends to contribute to the growth and development of an individual especially for children because they still undergo

some developmental processes. This is corroborated by Otiono (2014) who maintained that the human body functions better when provided with the right kinds of food and in the correct proportion. Otiono also stated that "no child's brain can develop to the maximum without feeding properly; as it improves brain size, increases dendrite, breathing, growth in support gland cells and capillaries. According to Vanvynckt (2010), proper nutrition in the formative years of children increases their ability and chances of high enrolment, retention and completion as well as motivate them in school. Vanvynckt therefore, concluded that nutritionally stunted children enroll later and drop out earlier than their peers who are well-nourished.

The second premise lies on argument that reasonable number of children in developing countries (Nigeria inclusive) who attend public basic schools sometimes go to school hungry and as such, can be easily motivated through the provision of school meals. Aligning to this, Akanbi (2013) observed that almost 60million children go to school hungry everyday in developing countries and about 40 percent of them are from Africa (Nigeria inclusive). In the same vein, Neeser (2012) admitted that 60 million children go to school hungry every day in developing countries. Thus, providing meals to school children in basic education remains very vital in reducing hunger and malnutrition among children as well as promoting students' enrolment, attendance, retention, progression, completion and transition.

Therefore, for the Nigerian government at all levels to better appreciate the need to sustain and expand the ongoing homegrown school feeding programme, the classical conditioning theory and the theory of connectionism have been x-rayed herein; bringing out their various distinctive implications. This would further debunk the position of Finan (2010) and Ash, Tatala, Frongillo, Ndossi and Latham (2013) among others who have argued that school feeding programme may not necessarily translate to making students to remain in the school.

Classical Conditioning Theory by Ivan Pavlov (1897)

The Classical Conditioning Theory (CCT) is one of the theories of learning propounded by Ivan Pavlov in 1897. This theory is also referred to as Pavlonian conditioning, respondent conditioning or stimulus-substitution. This theory explains how an organism's behaviour becomes paired with some stimuli/factors in the environment. It represents a condition where through repetition in a presentation of a stimulus, a learner generalizes an existing stimulus-response connection to some new stimuli. The focus of this theory is on a pattern of learning where the catalyst for behaviour change is what precedes behavior (McSweeney & Murphy, 2014).

Kendra (2019) sees classical conditioning as a learning process that occurs through associations between an environmental stimulus and a naturally occurring stimulus. It involves placing a neutral signal before a naturally occurring reflex. The theory is based on the assumption that all learning occurs through interactions with environment and that the environment shapes behavior. According to *Steinmetz (2010), classical conditioning theory* is based on the fact that unconditioned stimulus would originally produce unconditioned response. For example, Pavlov believed that food (U.S) would naturally produce salivation (UR) in dog. This kind of reaction or response was referred to as unlearnt reflex action. He further maintained that when US (food) is paired with the sound of bell which is the

conditioned stimulus (CS), the dog would produce salivation (UR). This is what he called the conditioning stage. At another state, US was removed leaving CS alone. After the experiment, the dog produced conditioned response (CR) salivation. This stage of learning could be referred to as manifestation of conditioned response (learnt behaviour).

In his experiment, Pavlov he took a hungry dog and kept it in a room and repeatedly gave the ringing of the bell, as a stimulus, soon followed by food (piece of meat) which led to salivation. Bell and food were presented in a sequence over a number of times and at every trial there was the bell. A stage reached when ringing of the bell led to normal salivation even when there was no food supplied. Neurologically, it could be explained that the stimulus bell followed by food led to the response of salivation in this manner. This process is by making the nerves carrying the stimulus of the food which leads to the response of salivation, coming closer and closer, with every trail to the nerves carrying the stimulus of the bell that a stage reached that there was an over lapping reinforcement of the nerves carrying the stimulus of food with the nerves carrying stimulus of the bell. In other words, a stage reached when the bell meant the food and the natural response of salivation was there to the unnatural stimulus of the bell. Such establishment of the nervous connections was the conditioned reflex. Here 'sight of food' was termed as UCS, the ringing of the bell as 'CS' and the 'salivating' on the ringing of the bell only was termed as CR (*Geurts, Huys, Ouden & Cools, 2013)*.

Implications to the Sustainability of Homegrown School Feeding Programme

There are several insights which can be obtained from Ivan Pavlov's theory and experiment as shown above; thereby helping in the sustainability of the ongoing home grown school feeding programme in Nigeria. First, if food could induce responses from an ordinary dog which was hungry by way of salivation, it therefore implies that the provision of food to basic school students via school feeding programme has huge tendency to induce a more active response by way of facilitating basic school students' enrolment, attendance, retention, progression and completion. Just like the first response of the dog, the initial intent of students by enrolling in school may be unconditioned response (UR). That is, not conditioning their minds to enroll and learn as well as remaining in the school till the point of completion but basically to participate in the meal. However, the consistency and continuity in the provision of school meal may later on produce a conditioned response (CR) in the learners by making them see the need to learn and complete their studies rather than just coming to school to eat and exit.

Second, since the dog in the second stage of the experiment started conditioning its mind at a point where there was an association or combination of food and bell, it therefore means that the provision of just school meal or food to basic school students may not be enough intervention to motivate students to purposefully enroll, retain and complete their studies. Rather, it would require a combination of other factors such as conducive classroom environment, functional and pragmatic learning contents, healthy teacher-students' relationship, equipped library and laboratory etc.

Third, the presence of school meal and some of factors would go a long way in conditioning the mind-set of the students to enroll, learn, retain and complete their studies even if school feeding is later on suspended. This holds true because it was obvious that when the bell was no longer accompanied with the food, the dog did not stop salivating (though rate of salivation gradually diminished). Implying that once the learners have already conditioned or made up their minds to learn, the stoppage of school feeding may not

necessarily affect their retention and completion immediately; as it may require a relative long period of time before they could realize it, they may have completed their study lower basic level already. Even if the school feeding progamme is stopped, if other interventions such as conducive classroom environment, functional and pragmatic learning contents, healthy teacher-students' relationship, equipped library and laboratory etc. are available, the tendency for the students to remain and complete their studies is very likely.

Fourth, classical conditioning theory also believes that one must be able to practice and master a task effectively before embarking on another one. This means that a student needs to be able to respond to a particular stimulus before he/she can be associated with a new one. Hence, the provision of school meal would help learners to keep coming to school untilthe point where they would master the act of coming to school and would decide to intentionally learn and remain in the school till completion.

Therefore, teachers should know how to motivate their students to learn by way of making their lessons interactive and participative. They should be versatile with various strategies that can enhance effective participation of the students in the teaching-learning activities.

Theory of Connectionism by Edward Thorndike (1898)

The theory of connectionism was introduced by an American psychologist: Edward Thorndike in 1898. He derived his theory by using cats, puzzle box and food. According to Thorndike, the fundamentals of learning are the association between sense impressions and impulse to action (stimuli and responses). These associations become strengthened or weakened by the nature and frequency of the stimuli-responses pairings. This means that an organism will repeat a behaviour if it obtains a pleasant or satisfying stimulus after first demonstrating it. He therefore postulated that learning in an organism involves the act of selecting the most appropriate response and associating it with specific problems or stimuli. Thorndike then described this type of theory as learning by "trial and error" or trial and success *(Thorndike (1913) cited in Kentridge, 2015).*

Thorndike arriving at this theory, the researcher puta hungry cat in a box and outside of the box was a fish that the cat could see and smell. The box had a door that could be opened by pressing a lever inside the cage. Sensing the fish, the cat would engage in a variety of behaviors in attempt to open the door and get the fish. Eventually, one of the behaviors (pressing the lever) would result in the door opening and the cat getting the fish. In the process, the cat made series of efforts to get outside and eventually, it succeeded in operating the mechanism, which paved way for its escape and obtaining the food. On the subsequent attempt, the random movement was reduced, and the cat concentrated much on the direction of the released mechanism until it was able to escape again (Thorndike, 1932 cited in *Cooper, 2019)*.

Learning for the hungry cat was a matter of making the connection between lever pressing and door-opening/fish eating. This learning was incremental not insightful. This means that the cat was not able to gain sudden insight or make a logical connection between lever pressing and door-opening/fish-eating. Instead, the cat made small incremental gains toward the lever-open door connection. Each time the cat was put in the puzzle box, it took successively fewer trials for it to make this connection between. Finally, after many times in the puzzle box, the cat eventually would go directly to the lever. This is called trial and error learning or selecting and connecting. The help of the released mechanism made it possible

for the cat to succeed in its escape. Hence, this type of learning is also known as instrumental conditioning (Thorndike, 1932 cited in *Cooper, 2019)*.

In line with Thorndike's experiment as illustrated above, he came up with a set of laws which are believed to be responsible for learning in an organism (*Steinmetz, 2010)*. These are the laws of effect, readiness and exercises.

i. Law of Effect: This refers to the consequence which an animal obtains for an action performed. It is the outcome of a response. Thorndike believed that any act that produces a satisfying effect or positive consequence will be repeated and vice versa.

ii. Law of Readiness: This law emphasized the desire/zeal of an organism to perform an action. It is the physiological condition of an individual to embark on a task. Since someone has been motivated to carry out an action, doing it at that point tends to satisfy the actor and not discourage him/her.

iii. Law of Exercises: This refers to strengthening or weakening of an event. Thorndike explained that repetition promotes learned associations between stimulus and response. Constant practice is necessary if an action is to be strengthened. Lack of practice may weaken an event.

Implications to the Sustainability of Homegrown School Feeding Programme

Since the theory of connectionism upholds that the fundamental of learning is the pairing association between stimuli and responses, it therefore implies that school meal as a stimulus has the capacity to induce positive response from children by way of enrolment, attendance, retention, progression, completion and transition. This is so to assume because children easily get attracted to food and scholars such as Akanbi (2013) and Neeser (2012) observed that almost 60million children go to school hungry everyday in developing countries and about 40 percent of them are from Africa (Nigeria inclusive). Thus, since some children in Nigeria go to school hungry and malnourished, if they are consistently and continuously offered school meal in conjunction with conducive learning environment, they are very much likely to remain and complete their studies. Continuity and consistently in the provision of the school meal via homegrown school feeding programme would enhance children's enrolment, attendance, retention, progression, completion and transitionbecause Thorndike's theory of connectionism emphasizes that the association between stimulus and response become strengthened or weakened based on the nature and frequency of the stimuli-responses pairings.

Drawing from Thorndike's law of effect which states that any act that produces a satisfying effect or positive consequence will be repeated and vice versa, it can be deduced that the tendency for children who go to school hungry and are given food to continuously attend classes and complete their studies is there provided their previous responses (enrolment and daily attendance) are accompanied by corresponding good and timely food supply or provision. Thus, as long as a hungry child is given food every time he/she comes to school, he/she may keep attending classes and eventual completion is possible.

As for the law of readiness which emphasizes that an organism with the desire/zeal would always perform an action, it means that children would be determined to enroll, attend and complete school when motivated by school feeding. The law of exercise maintains that constant practice is necessary if an action is to be strengthened; as lack of practice may weaken an event. This implies that as children get attracted by school feeding and get themselves enrolled in school, their constant and continuous practice of coming to school

and accessing the meal may eventually become habitual; resulting in strengthened and enhanced rate of retention as well as completion.

Conclusion

The introduction of school feeding pprogramme by the Federal Government of Nigeria as an intervention in the lower basic level of education remains very key to promoting children's enrolment, attendance, retention, progression and completion of basic education. However, the possibility of expanding and sustaining the homegrown school feeding programme by the Nigerian government may not be feasible; as many states are yet to domestic the programme. Some scholars have even expressed some reservations about the programme; calling the cancellation or discontinuity of the intervention. Considering the relevance of the programme in terms of boosting the nutritional health value of the learners as well as promoting students' participation in learning by way of children's enrolment, attendance, retention, progression, completion and transition, the programme should be sustained.

Recommendations

Since some school children especially those from low income status go to school hungry, homegrown school feeding programme should be sustained in order to boost the nutritional health value of the learners as well as reduce hunger and malnutrition among the students.

Since a whole lot states in Nigeria aside Osun and Kano States are yet to domestic homegrown school feeding programme, states should be encouraged to promote the programme for the benefit of the learners.

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