
Interest Development in Science by Pre-Primary and Primary School Pupils: Role of School Meal Plus Programme

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Abstract

Lack of interest, low enrolment and poor performance in Science subjects at post primary and tertiary education levels have been attributed in part to poor science education foundation at the primary school level. Such learner-related factors as stunted growth, reduced mental and physical capacity as well as reduced learning ability which are the consequences of mal and under nutrition have been found to be major contributors to the ugly tread. This necessitated this study examined into the effect of School Meal Plus Programme (SMPP) which was embarked upon by the Enugu State Government on anthropometric measurement of pre-primary and primary one pupils in some parts of the state. Specifically, the study compared the rate of increase in weight and height of the beneficiaries and the non-beneficiaries of the School Meal Plus Programme. The result was that the rate was much higher with the former than with the later. Based on this, the recommendation was that the SMPP be made compulsory in all primary schools in the country and since the programme is cost intensive, the financial agencies, NGOs and well meaning philanthropists should be involved in financing the programme.. This will enhance the achievement of the goals of pre-primary and primary education since sick and hungry children cannot derive benefit from any education programme no matter how laudable the programme may be.

Children are naturally active, inquisitive and explorative and these qualities are relevant and required for science education. Science as a “doing subject” (Maduabum, 1991 in Nwoji, 1999) involves such activities as questioning, investigation, observing, classifying among others (Obodo 1992) which are natural characteristics of children. They should be stimulated properly and sufficiently to learn maximally in the pre and early primary school classes by retaining them in school and channeling their natural characteristics towards developing interest in science and early enough which means “catching them young”. The development, according to Oladele and Lasisi (2006) is very necessary since early training in science will to a large extent, determine learners performance in science at subsequent education level. Above all, laying a sound basis

for scientific and reflective thinking is one of the aims of primary education (FME, 2004) cannot be achieved without a firm and sound foundation in science. The realization of this fact probably informed the Federal Republic of Nigeria (FRN) to recognize early childhood or Pre-Primary Education as a noble venture hence, its inclusion in the nations education programme.

Pre-primary education is the type of education given in an educational institution to children aged between three to six years prior to their entering the primary school at the age of six years (FRN, 2004:11).

Such names as Nursery, Creche, Kindergarten and Pre-School Education have been used by psychologist, policy-makers and educationists to describe that type of education. According to Chowdhury and Chaudhury (2002), that level of education is meant to develop all faculties of the children before they join the primary school at the age of six.

According to the FRN, the purpose of pre-primary education as stated in the National Policy on Education (NPE) document are to:

1. effect a smooth transition from the home to school;
2. prepare the child for the primary level of education;
3. provide adequate care and supervision for children while the parents are at work (on farms, in the market, offices);
4. inculcate social norms;
5. inculcate in the child the spirit of enquiry and creativity through the exploration of nature, the environment, art, music and playing with toys.
6. develop a sense of co-operation and team spirit;
7. learn good habits especially good health habits, and;
8. teach the rudiments of numbers, letters, colours, shapes, forms etc through play. (FRN, 2004:11)

The objectives are quite laudable and strategic for the laying of good foundation for all round development of the children particularly for science education. The objectives corroborate the 1999 Jomtien Declaration on Education for ALL (EFA) which asserted that “learning begins at birth”.

In appreciation of the importance of children education, Marcon (1992) opined that much priority attention should be given to the education of young children. The universal and unequivocal acceptance by all that children education deserves priority attention and maximum effort was corroborated by the International Bureau of Education on UNESCO (2006) when is asserted that with respect to Education for All (EFA) by the year 2011, early childhood education is a valid investment option for EFA. Science education, the hallmark for nation development and therefore an indispensable component if the entire education system deserves special and adequate attention right from the very early stage of formal education to ensure that the learners

are caught young no stone should be left unturned to ensure that children develop interest in science at the first stage of their education. Effort should be made to make children develop interest in school and school activities particularly in science in view of the paramount importance of science to both individual learners and the nation. If the natural endowment and characteristics of children at the pre-primary and early primary age are adequately developed, properly groomed and channeled in science classes towards acquiring scientific knowledge, skills and attitude at that stage of their formal education, they will grow up to not only to like but also to love science at subsequent education levels.

(Oladele and Lasisi, 2006). However, to achieve the above among others, sound mind and healthy body are pre requisites for the children. In other words, in addition to education needs of the Nigeria children, their basic and essential needs should not be addressed. Specifically, it is common knowledge that only well fed and healthy children can make effective use of educational opportunities (no matter how good they may be), it is paramount important healthy and nutritional needs of the pre-primary and primary school children be addressed together with their education needs. Nutrition is required as building block to good health which in turn is a resource for every day life (Walsh, 2002)

Simply put, proper educational development of the children, particularly at the very crucial growth stage of the pre-school period (3-6 years) hinges on their nutriment and health requirement.

Needs are permanent trends of human nature which underline human behaviour from birth to death under all circumstances and all kind of society (Chowdhury and Chaudhury, 2002). In Maslow's hierarchy of needs, the needs at the base of the hierarchy pyramid are usually considered more basic and important than those higher in the hierarchy and should therefore be met before the higher ones. Attempts made at ignoring the lower and basic ones to attend to the higher ones have always failed man.

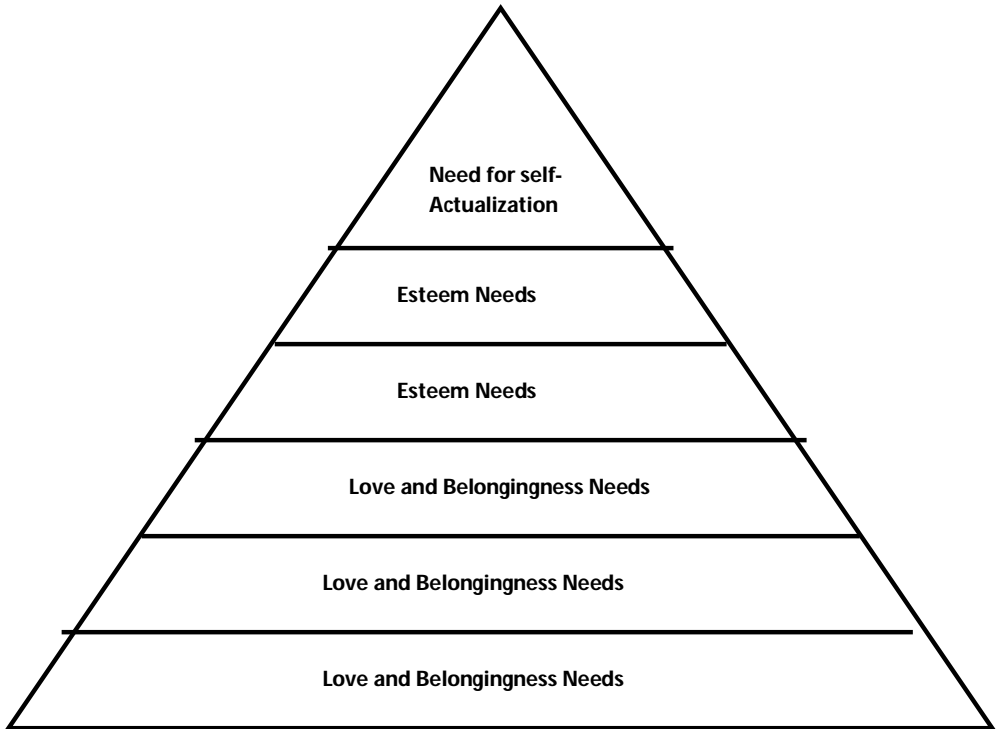


Fig. 1 Maslow's Hierarchy of Human Needs

By implication therefore, for the objectives of early childhood education to be achieved in Nigeria, the physiology needs of the children should be satisfied before, or together with their educational needs. There is no exaggeration in the statement that most Nigerian children of school age are out of school before and even with the inception of the UBA due to poverty and ignorance on the part of their parents/guardians among other reasons.

In the Words of Chowdhory and Choudhury (2002)

There are innumerable children in our country living in exceptionally difficult and disadvantaged condition whose even basic needs remain unsatisfied thus preventing them from attaining harmonious and optional growth and development. These children need special care, support and education for their welfare and overall development.

The basic and essential needs of children which should be taken care of by combined effort of parents and government (though managers and teachers of early childhood education) for the objective of ECE to be achieved include:

- a. adequate and appropriate diet

- b. prevention and treatment of illness and injury
- c. training in habits and skills necessary for maintenance and growth in life.

By implication therefore, human resource development which is important in any educational setting can only be achieved with good nutrition as the foundation of good health. The body needs basic food nutrients in order to provide energy, nurture or nourish the body, promote growth, repair and maintain all functions of the body (Samson-Akpan, Bassey and Essien, 2007). Ajala (2006: xiii) maintains that attacking illiteracy without simultaneously attacking mal and under nutrition that reduces learning capacity seems hopeless to put it mildly. To develop a general health service without beginning at the beginning, which is to say, with the building of the human body is simply not economical.

Attending to the nutritional needs of the early childhood and primary education pupils together with their education needs should therefore be viewed as a good stepping stone for human resource development and utilization in our educational setting. This is because, according to Smith and Ojofeitimi (1995) foundation of good mental and physical health, growth and development are laid on good nutrition. Children being very inquisitive and exploratory in nature need to be stimulated to learn maximally during the early childhood education period. This is the focus of the fourth basic need stated above, but this can only be effectively addressed after or together with the first and second basic needs. No amount of stimulation can make a hungry and/ or sick child learn, hence the need to address the first and the needs for the ECE objectives to be achieved.

The realization of this probably informed the School Meal Plus Programme (SMPP) embarked upon by the Enugu State government through the State Primary Education Board (ESPES) in 2004. To implement the programme were some donor agencies – (UNICEF and DFID) and the State Ministry of Health that addressed the “Plus” aspect of the programme.

Procedure

The programme was flagged off on Monday, 26th January, 2004. It involves the serving of one meal at appropriate times within the school period each day to every child in the pre-primary and primary one classes. The “Plus” aspect of the programme was the administration of vitamins supplements, de-worming drugs, immunization etc by the State Ministry of Health staff to the children. In addition to that, each child was made to come to school each day with one fruit in season which they ate along the meals. Meals served were okpa, yam porridge, rice and beans, moi-moi, akara and white agidi – all food items found in the locality and prepared and served by food vendors recruited from the communities, trained and supervised by staff of the State Primary Education Board. (ENSPEB; Report on the Enugu State School Meal Plus Programme, 2004). The height and weight of each child benefiting from the programme were taken and recorded properly in January 2004 when the programme

started. Same measurements were taken and recorded for ECE and primary one pupils in neighbouring schools in each of the communities but who were not among the beneficiaries. The heights and weights of same children in both benefiting and not benefiting schools were taken again in September of the same year ie nine months later.

Result:

Data obtained by measuring the heights and weights of two sets of children (one set that benefited from the SMPP and the other that did not benefit from the programme) first in January and then in September of the same year were subjected to statistical analysis and the results are summarized in table 1 below.

Table 1
Grand Mean of Weight (kg) and Height (cm) of SMPP Benefiting and Non-Benefiting Pre-Primary and Primary one Pupils

School status	No of Schools & Pupils	Mean Height (cm) in Sept	Mean Height (cm) in Jan	Mean Height (cm) increase	Mean Weight (kg) in Jan	Mean Weight (kg) in Sept	Mean Weight (kg) increase
Involved in SMPP	20 (2860)	78.64	103.97	25.33	13.95	18.93	4.98
Not involved in SMPP	20 (2911)	79.11	89.73	10.62	14.02	16.14	2.12

Findings of the Study

The study revealed that within the period:

1. The pupils who benefited from SMPP had a much higher increase in height (with a mean height increase of 25.33cm) than the non beneficiaries who recorded a mean height increase of 10.62cm.
2. the beneficiaries from the programme also recorded higher gain in weight (mean weight gain of 4.98kg) than non beneficiaries who had a mean weight gain of 2.12kg)

Discussion of Result

Data in table 1 above indicate increase in both height and weight for both groups of pupils involved in the study ie the beneficiaries and the non-beneficiaries of the SMPP. However, it is evident that those that benefited increased more in both height and weight than their counterparts who did not benefit and weight than their counterparts who did not benefit. Specifically the grand mean for increase in height and weight were 25.33 and 4.98 respectively for the beneficiaries and 10.62 and 2.12 respectively for the non beneficiaries. The result of the investigation tends to corroborate the opinion of Ene-Obong (2001) that the consequences of mal and under nutrition in children include stunted growth, reduced mental capacity and physical ability among others. The importance of food for proper and healthy growth particularly during the early childhood period is evident in the result of the study.

According to Chowdhury and Choudhury (2002), physical growth rate declines after a child is one year but the foundation of good health is laid during the pre-school age. Continuing, they stated that a child who failed to grow during this crucial, period may not make up for the loss in growth even with an excellent diet in later life. This probably guided Samson-Akpan et al (2007:232) assertion that the free school meal curriculum policy in Nigeria is a step in the right direction because it afford the child an opportunity of eating at least a balanced diet in a day instead of the junk food and sugar-saturated drinks without control occasioned by high poverty levels of the children's parents/guardians.

It is the opinion of the paper therefore that in addition to providing for the education needs of Nigerian children which most parents cannot afford for their children/wards due to low poverty level, the government should include the nutrition and health needs of the children in such programmes. This will ensure that the children will be fit enough to derive maximum benefits from the education opportunities provided for them since a hungry and / or sick child and make little or nothing out of any educational opportunity no matter how good it may be. A child that eats little or nothing at home would always be willing to go and remain in school when he is sure of at least, one good meal each day. In addition, in pre-primary and primary school science classes, children are guided to develop interest in science early enough because they are provided with materials with which they interact under the guidance of the teacher. By so doing, their natural, curiosity, inquisitiveness, investigativeness and explorative nature are satisfied. Their sense organs are put into use and they are made to be active. By so doing, they develop the basis science skills in life and this would enhance their better performance in science at subsequent levels

Children (particularly those at the pre and primary school age of 3-6 years) are more prone to nutritional deficiencies leading to various diseases. Good nutrition is reflected not in the absence of disease alone but in proper physical, emotional and mental conditions of individuals (Chowdhury and Chowdhury 2002) and it is only children in that condition that can benefit from educational opportunities provided by the government School Meal Plus Programme is the leeway for Nigerian Children. School Meal Programme also creates job opportunities for the food vendors thus reducing unemployment.

Conclusion

Pre-primary and primary education programme for Nigerian Children are necessary steps taken in the right direction by the government of the nation. It provides the opportunity for introducing children to science early in life which enhances the laying of sound foundation and development of interest in science education. They are no doubt, among the basic needs of the children but their objectives may never be fully achieved if their nutrition and health needs which are naturally pre-requisite to the education needs are ignored. These needs cannot be properly addressed by the

parents/guardians of the children alone due to the high level of poverty prevalent among the masses. School Meal Plus Programme (SMPP) for the pre-primary and early primary school pupils has been implemented by some state government in the country and the results have statistically shown that it is a solution to the children's mal and under nutrition problems occasioned by poverty and which can hinder the realization of the objectives of the pre-primary and primary education in the country. SMPP should therefore be taken up as a national programme and made compulsory in all primary schools. Since it is cost intensive, donor agencies, NGOs and philanthropists should assist the government bear the financial burden to make it work.

Recommendations

Based on the foregoing, it is recommended that

1. all state governments should be supported by other level communities, NGOs and philanthropist in various communities to initiate and sustain School Meal Plus Programme for all pre and primary and junior primary pupils in the country.
2. School Meal Plus Programme school be made compulsory in all government primary schools for our pre-primary and primary one pupils.
3. State Primary Education Boards should set up effective monitoring and supervising committees charged with the responsibility of ensuring that the programme is properly implemented and sustained.

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