Theme: Learning in the Perspective of Complex Long -Term Change

Title of paper: The Right of a Pre-school Child to Developing a Scientific Mind

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(1): Introduction:

A/ Definition of pre-school age, scientific mind, its features, engineering factors and Importance:

The period of early childhood is the period that extends from (0-8) years of age. This period is found to be of crucial importance since 80% of the nervous system and of course the brain which is part of the central nervous system, develops during it. In fact, “some parts of the brain do not reach maturity until adolescence” (Solchany, 2006).

The mind is defined by Morin (1999) as an emergence of the brain brought forth by culture, and it would not exist without the brain. While Whitmer stated that the mind is shaped by the information that comes from the body and accordingly it is part of it (1997). But information from neurology indicates that changes in external environment interplay with the changes in internal development of the nervous system. Development of the individual nervous system and its body depends on the environment or the surrounding on which the development takes place. Accordingly the mind is also a result of an interaction between inner and outer environment of the body. There both culture (which is the acquired behavior) and nutrition, are of top significance. Although researches indicated that providing opportunities for complex perceptual and motor experiences can even compensate, at least

partly, for deficits associated with early malnutrition (Consultative Group on ECCD, 1990).

The scientific mind as a dimension of human capacity was defined by Visser (2005) as “creative essence of who we are and to understand the extent of complexity of problems we face”. He also stated that “the essential features of scientific mind are: inquiring, imagination/creative thought, envisioning/prediction, collaboration, dialogue - including respectful dissent, independence of thought, tolerance of thought of others, practice of establishing ways of coming to agreement construction-building on existing knowledge, seeking beauty, integrity, wholeness, and parsimony”.

The author of this paper finds the following as important features for a scientific mind to be added to what previously stated by Visser: (1): Ability to solve special problems; (2): Understanding; (3): Freedom of opinion and expression. (4): Critical abilities; (5): Ability to compare, (6): To think globally (whole/part relation); (7): The ability to use a comprehensive scientific and rational way of thinking; and (8) Active participation (Abd Alla, 2007).

The following are suggested by the paper mentioned above to be important engineering factors for a scientific mind:
(1) Affectivity, (2) Nurturing of the brain, (3) Culture, (4) Patriarchy, (5) Interplay between external environment and development of individual nervous system and its body, (6) Integrity of the mind, (7) Interests, (8) Intelligence, (9) Learning, (10) Linking study of modern science with its history, philosophy and methodologies that produces it, and (11) Strategy of pedagogy.

Building a scientific mind requires a multiple setting like: family, school, media clubs, work places, extension centers and communal living

(Visser, 2005). Schools and all other education institutions should play a major role than they are doing due to repercussions of globalization which has changed the nature of our society significantly. It shattered the ability of the families to focus on and support the education of their children.

Globalization results in the domination for best quality and cheapest commodities, which are in turn the results of knowledge and skills that education offers to individuals and communities. As well advances in technology are accelerating at a faster rate than ever before, and consequently the workforce is having to change constantly to keep pace and most people will not stay in the same type of job for very long time and employers now want their workforce to be flexible and innovative a matter that necessitates that learning has to become a lifelong process. This also entails constant adaptation to different situations and acquires new knowledge. Therefore, knowledge in its self, gains higher importance as a result of being one of the decisive economic factors. And "education becomes one of the branches of the economy from its resemblance and means of development" (Mursi, 1990). Thereby, knowledge in itself becomes a "commodity and subject for production and exchange" (lbid).

Consequently, it becomes very important to equip our children and from birth – if possible- with means and capabilities that enable them in the future not to be only lifelong self -gaining knowledge individuals, but being able even to produce knowledge. These abilities are only achievable through developing a scientific mind and scientific thinking.

Researchers pointed out that, if the current trends of globalization remain the same, by the year 2020 nearly 50% of all students will be educationally disadvantaged (Rogers and Freiberg, 1994). The student has to be accustomed to a more independent way of studying. The base for this

type of education is laid down in early years of childhood. The scientific mind as a dimension of human capacity is of vital importance in this respect since it is the “creative essence of who we are and to understand the extent of complexity of problems we face” (Visser, 2005). And the pre-school education is of vital importance since researchers pointed out that, during those early years the child gains knowledge and develops competencies that are the underpinning of later learning.

B/ Importance of Pre-school programs and justification of the study:

People can gain great benefits from pre-school education, as one of early childhood (0-8 years) services. During the pre-school education bases for self-education and life-long learning are laid, especially if children needs such as abilities of thinking, giving opportunities of self-expression and creativity are fulfilled. Also researches indicated that it could help to moderate or eradicate learning disabilities, such as mental delays and retardation. The effects go beyond the learning of basic abilities to include; improved school attendance and performance, reduce repetition, increased employment and reduced delinquency during the teenage years.

There is increasing evidence that children from more disadvantaged backgrounds can profit more from good early childhood programs than more advantaged children. Providing opportunities for complex perceptual and motor experiences can even compensate, at least partly, for deficits associated with early malnutrition (Consultative Group on ECCD, 1990).

“However, much of the capacity for success in life depends on the quality of prenatal care of mother, on nutritional adequacy during pregnancy, and on both the physiological and spiritual nurturing of children

during early childhood. Not only on the physiological basis for good health laid during early child years but those essential values that have such high payoffs in competitive markets are also transmitted from parents to children. These transfers include such critical assets as self - esteem, a work ethic and a sense of discipline and awareness of family traditions and of the community to which one belongs, a vision of opportunity, and a thirst for knowledge (Evans *et al*, 2000).

"Earliest stages of human life- from conception to primary school age (6-8 years old)- are the most critical interval of the "Intergenerational Transmission of Poverty (ITP) Cycle", which is the process by which parents pass on poverty and disadvantage that occurs primarily in early child years of life to their children" (Moran, 2003).

The programmes directed to the children have to be of good quality and meet the needs of the children to live, grow and develop psycho-socially and cognitively. "By developing, a child is better to be able to function by adjusting to new settings and transforming the settings in which she/he lives. The more advanced the development of a child, the greater the potential of that child to participate actively and positively in life's events, and to become empowered to affect others and the world around her/him. Attention to child's development in all its dimensions can help to increase survival and growth, even as it enhances the development and quality of life" (UNICEF,1998).

The care to the pre-school education is expected to help the developing countries to be gainer and producer of knowledge and thus eliminating one of the causes of poverty that stated by the World Bank which makes a strong case for knowledge in poor countries: "poor countries and poor people differ from rich ones not only because they have less capital but they have less

knowledge". It adds that "poor countries differ from rich in having fewer institutions to certify quality, enforce standards …." (The World Development Report,1999). Thus this article suggests that the preschool education and its quality control (evaluations) could help the poor countries stop getting disadvantaged and marginalized in a globalizing world and a means of getting out of their " poverty trap " as stated by Marshall (2002) and to reduce risks of conflict as Collier (2000) stated that ”Some empirical evidence shows that civil wars are concentrated in countries with little education and importantly a country with higher percentage of its youth in schools reduces considerably its risks of conflict”.

Due to all these benefits of child care, development and education stated above, people in Sudan are in great need for such programmes especially in places suffering marginalization, natural disasters, and conflict areas

2: Goal of the paper:

The goal of this paper is to make an assessment of the pre-school curriculum from the point of view of its suitability for the development of the scientific mind while looking at not availing room for such a mind set as violation of human rights on education, development and peace.

Objectives:

The objectives of the evaluation are to see to what extent the curriculum designed is managed to help:

1/ to acknowledge, importantly, features of scientific mind like: collaboration, dialogue- including respectful dissent; independence of thought; tolerance of thought of others; practice of establishing ways of

coming to agreement, that are of significance to a country of multidimensional cultures and faces serious conflicts almost in all its parts.

2/ to provide room for features of scientific mind of relevance to age of a pre-school child stately: inquiring, and imagination / creativity etc…..

3/ to establish a base and creating a foundation for future education;

4/ to discuss development of scientific mind of a preschool child as a multidimensional human right - since it has to do with the right to education, development and peace; and

5/ to suggest measures to enhance these rights.

3: Methodology:

Qualitative content analysis of all books, reading materials and teachers' guides is adopted. These include: (a): The book called "Experiences Curriculum" which contains the content with concepts, objectives , activities, materials, references used and means of evaluation for each targeted behaviour. It is considered as the principal reference for the teacher. It contains seven experiences in the following areas: 1/ Islamic religion; 2/ Linguistics (Arabic only); 3/ Mathematics; 4/Sciences; 5/ Socialization; 6/ Arts; and 7/physical experiences.

(b) The second book is: Units Curriculum: It elaborates the first book and it is designed to accommodate subjects around which the child attention is directed. These are five units for the first year (my kindergarten, my family, my town, my farm and the market) and six units in the second year (the sky, my prayers, my body, transport, my profession and craft and my country) plus an additional unit that is directed to be delivered during feasts.

©Two Teacher's Guide Books, one for each year and that contain plays (physical and others) targeting development of the senses. (D) Training

books for teachers that acquaint her with the pre-school child needs, explains the curriculum and how to use it and to plan its execution, how to solve child's behavioral problems, how to deal with children with special needs, thinking and intelligence skills. In addition to, (E) Nursery rhymes books

This is the national curriculum as it is titled. Some other Sudanese states tried to build ones but appeared to resemble the "National" one very much (Omer, 2006).

4: Pre- school Education in Sudan:

Introduction:

The General Education Planning Act was enacted in the year 2000. The Act states that each Sudanese child at the age of 6 years shall have the right to basic education. The Act also specified the school education cycles as under: (a) Pre-school education of two years' duration (4 &5); (b) Basic education of 8 years' duration (age group 6-13) and (c) Secondary school education of 3 years' duration (age group 14-16).

The national enrollment percentage for the year 2003 was 25.4% for both sexes as compared to the 20% enrollment of the year 2000; it was 27.2% among boys whereas it was 23.5% among girls. The percentage however, varied considerably between states, from 6.6% in Bahar Elghazal State to 52.8% in the Northern State.

5: Analysis of Pre-school Curricula and discussion: (Philosophy, coverage, content, and methods adopted)

(a) **Philosophy of the pre-school education:**

The philosophy of the pre-school education emanates from the philosophy and goals of Sudanese education which rests on values and religion heritage and on goals that were drawn by the National Conference on Polices of Education (1990). The goals assured the religion and religious

values and on contemporary comprehensive development that adopt latest development in the field of education (Omer, 2006).

“Apart from these goals, the nature of the society is also an important determinant for designing curriculum for its schools and as well the pre-schools goals that were stemmed from it. The Sudanese society is a multi-religious, multi-ethnic and multi-linguistic society and this diversity is, in fact, its strength. In such a society, the school curriculum ought to be characterized by substantial amount of communality in certain aspects while in certain other aspects in-built mechanism for flexibility to encourage local initiative and specificity would be more desirable”(Arora, 2000). This desirable curriculum described by the former writer is of importance for sharing peace, the same land and resources especially if we consider the opinion of constructivists who point out that ethnicity is not an immutable fact that inevitably leads to war. It is socially constructed in the sense that symbols, myths, and memories can be altered over time (Joseph, 2005).

The homogenization of different identities completely failed, and left room for emergence of identity issues at a large scale and with types that extends from national identity to religious identity and from race to tribe to family. Those manifest themselves in conflicts that are unwrapping in different parts of Africa and Asia. Inspite of the negative consequences of the process of division of identities into smaller units, yet they remain rich sources of humanbeing’s creation in the face of forced homogenization that is produced by economic globalization (Al Nagash, 2006). Thawro stated that: “Without diversity of peculiarities of human being’s creation there is no way to understand existence of the various states of human beings and we can not also manage to estimate the universality of human beings and we can not managed to estimate the universality of goals and ambitions of humanity and

that is the reason why peculiarities of arts are the best means to globalize the creation (in Al Nagash, 2006).

The dominant discourse in Sudan is one where power and Islamic theocracy legitimize each other and spell over into the educational discourse. The homogenizing efforts of the dominant discourse are to eradicate differences of ethnicities, religion and languages as a constituting factor in the Sudanese education system.

The official language of communication is Arabic and until recently and only after the commencement of the Comprehensive Peace Agreement – that ended more than two decades of war in the South-, the English is added to be one of the official languages. Whereas the Sudan, contains within its borders representatives of all the major defined grouping of language in Africa, except the Khoisan languages of Southern Africa (Stevenson, 1968 in Fadel, 2006) and the UNESCO advices using 'mother tongue languages' at least at basic levels of education as well the Child Rights Convention (Article 30).

(b): Coverage

Ten states in Sudan have made progress in enrollment while five states have declined (Omer, 2006). It is difficult to control the irregular pattern of distribution of the kindergartens due to the fact that the bulk of pre-school education is still under direct supervision of the community (National Report of Sudan, 2004). And as well there is no feeling of its importance at both ministerial and country levels. Hence "The State of the homeland, the eighth Sudanese Strategic Report (2006-2007)" came bare of any information concerning the pre-school education although statistics for

the year 2004 indicated the percentage of population below 5 years equal to 15.5% as appeared in the previous report. Also it is noticed that this type of education is concentrated in towns whereas the rural dwellers constituted 62% of the population. It seems that the word of Myers in his famous book "The Twelve Who Survive: Strengthening programmes of Early Childhood Development in the Third Word" are still valid. He in 1992 stated that "at present, a detailed and comprehensive description of child care and development in the Third World is impossible….. A great deal of child care is so informal that it is not included within any set of statistics".

(c) Content:

The present curriculum contains varied skills but they are badly scrutinized to the needs of the child. Previous studies on the curriculum revealed that: Islamic learning constitutes (19.7%), language (18%), social learning (18%), scientific learning (18.4%), mathematics (14.3%), physical experiences (6.7%), and artistic experiences constitute 4.9% of the experiences offered by the curriculum. Knowledge and experiences that are offered to the child constituted (56%), values (19.3%) and the skills constituted (24.7%) of the experiences. Whereas, as stated earlier, giving the child more opportunities for complex perceptual and motor experiences can even compensate, at least partly, for deficits associated with early malnutrition (Conclusive Group on ECCD, 1991), putting in mind that more than 95% % of the population are under the poverty line according to the strategic report (2004).

The present study shows that the 'Islamic religion teachings' constitutes a major part in the syllabus both explicitly and implicitly. This in itself leads to expelling the others who belong to different religions. Also Muslim children have to study and learn most of the religion teachings and

holy Quraan by heart and without even being able to grasp the meaning. Thus leaving a small room for free thinking, imagination and creation let alone the time allotted for playing and engaging in creative activities and arts will be very limited. Awad Alkareem (in Omer, 2006) noticed that the "Experiences Curriculum" covered 86 values that repeated themselves either explicitly or implicitly 2804 times and the rating of these values indicated in a descending manner is like this: 1/ God's thanks; 2/ Love for prophet Mohamed; 3/ in-depth observation;4/ believe in God;6/ love and respect for Quraan ; 7/ knowledge of the elements of environment., 9/love of homeland; 9/obeying parents; 10/ loving beauty; 11/playing; 12/ loving the 'Book'; intimacy of family relations; 13, the pilgrimage (Hajj) ; 14/discipline; 15/ loving teacher; 19/ expression of opinions; 20/ appreciation of hand work, 21/ relaxation;22/ patience; 23/ perfection and creativity;24/ loving kindergarten; 25/ solving problems and the last value to come is logical thinking. Park (2006) mentioned that "one must not overlook the social, regional and national interests that shape our selection of communications, and also the way we perceive them". Al Saeed pointed that development of modern education is strongly linked to the State, ethnic and cultural identity on the expense of human identity (2004). Also he mentioned that so many countries look at it as a mean of 'communal politics' and development of a citizen so much amalgamated within state and identity including his language, and national culture. Usually this leads to fostering of hatred for other nationalities and other countries from early years of life. Such politically and ideologically influenced education is the one that is responsible for tendency towards violence and loosening of links between knowledge and morals. He added that we opt for a different type of

education that reasonably has an acceptance among many societal and cultural grouping.

The present study is in accord with analytical study of the same curriculum executed by UNESCO (in Omer, 2006) in respect to brain development objectives. They were clearly and explicitly stated as well as affectivity, imaginary development and skills of collaboration and respect of others. Means of discoveries, problem solving and cooperative learning did not amount to the same importance.

The educational experiences need to be changed to be more practical than they are. This phenomenon is found to prevail across all the levels of the educational systems of the Arab World. The detachment from reality is one of the features of modern education. Children at a very early age and for a very long time were detached from their real local living conditions in their societies and then suddenly been pushed into professions that resemble reality (Al Saeed, 2004).

Assessment of implementation of objectives was not designed to be executed according to principles of measurement and evaluation. No example was given for assessment of the daily programme.

The Child Right Convention (CRC) *inter alia* implicitly pointed importance of the right of the child to have the correct information. Article (32) reads “State parties recognize the right of the child to be protected from economic exploitation and from performing any work that is likely to be hazardous or to interfere with the child’s education, to be harmful to the child health, mental, spiritual, moral or social development”. But the present study revealed that looking into the nursery rhymes books; explores the fact that one of nursery rhymes says: “the fish under water respires without air”. All of us know that this is a wrong statement and the correct one is that: the

fish breathes oxygen that dissolves in water. That nursery rhyme hinders future understanding and learning especially these rhymes are easily absorbed and get stuck in mind of a child. As such, such an erroneous statement will put the mind of the child astray about respiratory systems in all Animal kingdom.

Another feature of this education as noticed by this study is; the absence of the concept ‘sustainable development’ in the curriculum, although elements of the physical environment were there.

A crucial important feature of this type of education in Sudan is that generally the teachers are not well-trained and some of them are not trained at all and have no culture to deal with children in order to enhance their learning and socialization in future years. What are offered to a teacher are two guide books and a book called “Units” which actually only details the “Experience Curriculum”.

The stereotype of a girl in the books leads to exclude her from the domain of knowledge because its future will be a mother who takes care of her family members i.e. there is no need for future learning let alone being creative and participation in the societal change.

From the previous analysis it is clear that the curriculum hinders the improvement of the scientific mind of the child and it violates the child rights as appeared in CRC.

(6) Pre-school child’s scientific mind as a ‘number of rights’:

The Child Rights Convention, Article 18 (3) states that: States parties shall all use appropriate measures to ensure that children of working parents have the right to benefit from child-care services and facilities of which they are eligible.

Therefore, the pre-schools and kindergartens are supposed to be child –care services.

Article 28 of the CRC states that: “State parties recognize the child right to education and with a view to achieving this right progressively and on the basis of equal opportunity, they shall in particular: *inter alia* “to take measures to encourage regular attendance at school and reduction of drop-out rates". Pre-school education prepares the child for school and there is nothing better than seeing a child well prepared for the school and the school is well prepared for the child. “The readiness of children for school is defined in terms children’s physical abilities and activity levels, cognitive ability, learning style, knowledge base and social and psychological competencies, while the readiness of the schools for the children is considered in terms of availability, accessibility, quality and adaptation to local needs and circumstances” (Consultative Group on ECCD, 1991). .

Pre-school education was found to help to decrease drop-outs and reduces the cost of schooling years. Researches indicated that support of pre-school education for young children will undoubtedly stabilize children, provide them with structure and most importantly frees up time for their parents and guardians to address other concerns (Sommers, 2002). Introduction and supporting of simple community-based kindergarten and pre-school activities could be effective ways of ensuring girls’ enrollment and retention in school (Sinclair, 2001).

According, to both Articles namely Article 18 (a) and Article 28, the current paper deduces that kindergartens and pre-school education are parts of the child rights.

Also for the following: (1) Societies benefit through increased productivity and cost savings associated with enhanced early child

development and education. (2)The role of pre-school education in human development which can no longer be seen as a luxury for developed countries that wish to grow and create better living conditions especially for multi-cultural societies who must nurture the child with how to respect the other, his culture (knowledge and wisdom), teaches him to sustain environment and family linkages, human rights and citizenship. That means to create an environment of social inclusion, in which one can take advantage of their talents, their skills and their ideas. During such programmes bases for cooperation, respect of other, democracy and peace are laid. The values are of importance for a country like Sudan, where the education system has contributed immensely to marginalization and exclusion of a large sector of its people. The catastrophic Darfur crisis is an example where due to the accumulated repercussions of marginalization and conflicting economical interests and as a result of political polarization during the present conflict and in the past, segregation between the African and Arabs and tribal identities became too pronounced and contributed effectively to the conflict –although in the past it had no significance (International Fact Finding Committee for Darfur, 2005 in Elgizuli, 2006).
(3)Access to education besides being a fundamental 'right', it is also an effective tool of promoting global values of humanity and citizenship not only in peacetime but more importantly during civil wars (Sommers, 2002).
(4) "The human development" and "peace" are parts of the human rights;

This paper deduces that pre-school education of good quality should be seen as a human right through which other rights will achieved.

And reading the CRC indicates the following: Article 6 (2) which states that: State parties shall ensure to the maximum extent possible the survival

and development of the child, Article 8 stated the child right ‘to preserve its identity’ and Article (13) reads like the following: The child shall have the right to freedom of expression, this right shall include freedom to seek, receive and impart information and ideas of all kinds, regardless of frontiers, either orally, in writing or in print, in form of art or any other media of the child’s choice. Art. 29 states that the education of the child shall be directed to: (a)“development of the child’s personality, talents, and a mental and physical abilities to their fullest potential.(b): the development of respect for human rights and fundamental freedoms, and for the principles enshrined in the Charter of the United Nations.(c): The development for respect for the natural environment and Art. 30 gives the child belonging to minority the right to “… enjoy his or her own culture, to profess and practice his or her own religion, or to use his or her own language”.

Since these principles and values enshrined in the child rights constitutes important features of the ‘scientific mind’, development of the scientific mind is considered by the present study, as a right to be respected although it is not explicitly stated in the Convention. Putting in mind these rights will not be able to cultivate them unless the foundations of these rights are put ahead in early childhood. Therefore, developing a scientific mind for a pre-school child is a human right. Thus, since earlier the paper made inferences that pre-school education of good quality should be seen as a ‘number of rights’ and developing a scientific mind is one of the features of the ‘good quality’, therefore, developing a scientific mind for a pre-school child should be seen as a human right through which other human rights will be achieved.

(7) How to enforce these rights and Conclusion:

Generally, “The international human rights obligations of states are implemented, if at all, through national action. Like most obligations in international law, international human rights obligations ultimately rest on the more or less voluntary willingness of states to discharge their obligations. Complaints/communication procedures also depend heavily on the good intentions of states. Confidentiality and direct state participation is the norm. The only real sanction available to most supervisory committees is whatever additional publicity its report may provide” (Donnelly, 2003).

Experiences also indicated that the major task facing child rights advocates today is making the UN Convention on the Rights of the Child a reality for all children. Yet the study suggested that the following:

1/ There is a need to make the pre-school education a legally binding right through a legislative enactment.

2/ To work towards producing a special covenant on education that addresses all issues of education (philosophy, content and its accuracy, pedagogy, and administration….etc)

3/ UNCIEF should participate in pre-school education of good quality in Sudan beside supporting Khalaws (Koranic Schools) and girls’ educations especially in rural areas and areas of conflict with special attention to children of special needs.

4/UNISCO should adopt teaching a course on child development that is linked to the child rights at all final classes of basic and secondary schools and in universities. This course is expected to make the future parents accountable for their children development, better education chance for their children, and appreciation of mothers’ rearing child role and could help in sharing household responsibilities and achieving gender equality beside the immense societal and global benefits from that type of care to the child.

5/ The involvement of the public is a must for building the scientific mind of children. Institutions other than ministries of education and social affairs should also be encouraged.

6/ Such analyses and evaluations of curricula of all levels of education could be safely used as means to explore to what extents that governments are in compliance with the human rights conventions.

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The following are conditions affecting learning; 1/ intelligence; 2/age; 3/ learning situation: physical facilities for learning (institutions, teachers, textbooks, audio-visual aids that promote learning (4) motivation (Park, 2005).

The student has to be accustomed to a more independent way of studying (Anderson and Percival, 1997). The base for this type of education is laid down in early years

/ UNCIEF should participate in pre-school education of quality beside supporting Khalaws (Koranic Schools) which maintain the primary function of memorization of the Koran and teaching of Islamic principle while, at the same time, enabling pupils to learn modern subjects needed in everyday life beside its support to girls' educations especially in rural areas and areas of conflict with special attention to disabled children and children of special needs.