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The Alternative Curriculum

A child-centered approach

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Introduction

This thesis concerns itself with 'child education' or more specifically 'child development'. The fact that the two are often thought of as separate fields of study is a primary issue of much of this thesis, and we will discuss along the way the need to 'psychologise' education by aligning it with the child's abilities and natural order of growth, thus rendering it 'child-centered' and more importantly unifying the concept of 'child-education' with 'child-development'. Frequently, we will hear the term 'alternative curriculum' and 'child-centered curriculum', they are used freely and frequently in place of each other with the same effect as they mean the same thing.

The chapters are as follows:

Chapter 1: 'Schooling' versus 'Education'.

The discussion of 'schooling' versus 'education' is not a new one, yet it is an argument which is very much alive today among educational philosophers and developmental psychologists. At the heart of the discussion is the question; should education be 'formation from without', i.e. teacher centred and Traditionalist, or should it be 'development from within' i.e. child-centered and Progressive (Dewey, 1963, p.17). Here we shall gain our first insight into what is meant by the term 'schooling' as opposed to the term 'education' with a brief description of each, and then progress to a broader perspective of each with the focus turning to the politics of the two methods of education. The Irish education system shall be mentioned briefly, however this argument of 'schooling' versus 'education' is a world wide debate.

Chapter 2: The Alternative Curriculum, (A child-centered approach).

The nature of the alternative curriculum will be discussed here and we shall receive our first introduction to educational philosophers and child developmental psychologists such as John Dewey, Jean Piaget, Maria Montessori and Plato. These shall be discussed in greater detail in chapter three and chapter two's focus shall be based on the need to 'psychologise' education (the design of the curriculum sequences in light of the child's interests and abilities) we will also discuss the need to ensure that education is 'child-centered', the suitability of the learning environment and the need of matching education to real life. Many of the writings are influenced by John Dewey - the American educational philosopher whom is often termed the Father of Progressive education, (child-centered).

Chapter 3: Philosophies of education.

Discussion here will focus not in terms of 'ism's' i.e. schools of philosophy e.g Traditionalism, Humanism, Radicalism etc, rather we will explore how different educational philosophers and developmental psychologists have handled the subject of a child-centered education. There are of course many different educational philosophers to choose from. The four I have chosen are

those I deem most suitable to the subject and with whom I am most familiar. With the sheer volume of work published by these people it would be impossible to offer but a small synopsis of their respective theories. My intention has been to edit and present a brief outline of their most relevant theories without abstraction or invention. Obviously though, the best way to familiarise oneself with these people is to read their work first-hand.

Chapter 1

Schooling versus Education

> **The history of education theory is marked by the opposition between the ideas that education is development from within and that it is formation without; that it is based upon natural endowments and that education is a process of overcoming natural inclination and substituting in its place habits acquired under external pressure (Dewey, 1963, p.17).**

When discussing the issues of schooling versus education, two schools of philosophy emerge. Differing both in terms of means and end, these two philosophies are termed ''traditional' and 'progressive', 'education' being synonymous with the latter, 'schooling' implicit in the former. These two schools of philosophy are very different from each other, one relying on a method, means and desiring an end which the other rejects. The introduction quote by John Dewey of the progressive school of education, sets out the two schools contention with each other.

We will now examine both schools in terms of their respective philosophies.

Traditionalist Education

With the arrival of the industrial age, new demands were being made upon individuals entering society and education was to supply these demands.

> **With the increasing demand for knowledge and skill consequent on it, 'eduction' became increasingly associated with 'schooling' and with the sort of training and instruction that went on in specialised institutions (Hirst, 1975, p. 23).**

This new philosophy of 'schooling' has since been employed in Ireland and most other countries around the world today by adopting a curriculum that has been designed from this traditionalist perspective. A traditionalist philosophy is one that is concerned with the imparting and transmission of information in the form of pre-determined bodies of knowledge and socially approved values with the belief that just as it is possible to exercise the body through strenuous activity, it is equally possible to strengthen the mind through the discipline involved with learning hard or difficult subjects.

> **Traditionalists believe that schools should transmit the culture of the past by making traditional subject matter their central focus, they also believe that heavy emphasis on subject matter itself helps to develop mental powers (Abruscato, 1985, p. 168).**

This imparting of pre-determined information had negative consequences upon the child and the teacher, resulting in what Carl Rodgers termed the 'mug and jug' method of eduction in relation to the role each now assumes and the relationship between the two.
With the teacher now being the possessor of power and information, there was no other role for the student to fill but the passive recipient of this prescribed information.

> **The child is simply the immature being who is to be matured; he is the superficial being who is to be deepened; his is the narrow experience which is to be widened. It is his to receive, to accept. This part is fulfiled when he is ductile and docile (Dewey, 1974, p.8).**

An approach such as this is then said to be 'teacher-centred' and follows that teaching is largely, if not exclusively mimetic - i.e. the teacher demonstrating the desired performance and behaviour and the student being required to duplicate it as faithfully as possible. Knowledge rather then inquiry on behalf of the child is favoured as is obedience as opposed to independence of mind. The child's natural curiosities were not given reign as prespecified outcomes were presented rather than any lines of enquiry that would lead to those ends.

> **"Scientific laws and facts were taught rather than the critical attitudes and ways of thinking of a scientist. As too were 'moral conformity but not moral awareness" (Hirst, 1972, p. 32).**

Another reason the Traditional method of education is said to be termed 'teacher-centred' is due to the insensitivity of the curriculum toward the child and its cognitive development. It was largely taught that this approach was acceptable, as traditionalists supposed that children learn only one thing at a time . . . they "tended to think explicitly *only* about clearly expressing what is to be learned, taking a knowledge of the pupils cognitive state for granted" (ibid., 1972, p. 81). Classes and days were fragmented into lessons just as experience was condensed into facts in textbooks. With "these traditional subject divisions being artificial impediments to the child's natural curiosity, and the examinations an elitist device whose main function is to encourage a sense of rejection and failure" (ibid., 1972, p. 1). The subject of standardised testing will be examined later. As Dewey said

> **there is no obvious social motive for the acquirement of mere learning, there is no clear social gain in success threat. Almost the only measure of success is a competitive one in the bad sense of that term - a comparison of results in the recitation or in the examination to see which child has succeeded in getting ahead of others in storing up, in accumulating the maximum of information (Dewey, 1974, p. 5).**

What we can perceive is that the traditional method of education is more appropriately termed 'schooling' since it is oppressive, employing a basic skills approach, requiring the pupil to master literacies and skills designated by a curriculum based upon the 3R's - what Dewey

refers to as 'formation from without' and a 'process of overcoming natural inclination and substituting in its place habits acquired under external pressure' (Dewey, 1963, p. 17)

Now we will examine briefly the progressive method which relies on 'education'.

Progressive Philosophy:

The most important element within the 'Progressive education' is naturally the child. To be more precise, it is the child's development. Piaget stated that the child's development is favourable and more important than its 'education' as such. It is after all, possible to 'educate' a child i.e. fill them with facts etc and neglect the child's development, but it is not possible to achieve optimum development with a child and have that child have no understanding of his world. As we have already discussed, once a child is active within its environment he is assimilating concepts etc all the time.

The child is considered the beginning and end of the education, thus the method is said to be 'child-centered'. Because the progressive method of education is termed 'child-centered', the role of the teacher is changed significantly. The teacher's role is to facilitate the child's development and to direct it with a sensitivity to the child's abilities of the time (see Piaget and Montessori in chapter 3).

Teaching is transformative as opposed to mimetic. The teacher is the coach of the facilitator, trying to evoke certain qualities or understandings in pupils. By posing problems, creating challenges, placing the student in certain situations, furthering the child's understanding by helping him work out his own ideas" (Gardner,1993,p.116).

Montessori termed the method for the child as an 'auto education', however, the term 'facilitator' and words such as 'discovery learning' and 'active involvement' are not uncommon when discussing 'Progressive education'.

Since the system is not based upon the authoritative method of filling the child with knowledge from books via the teacher, the student is obviously not required to sit and listen. Its development is dependant upon its interaction within the environment and assimilating concepts and knowledge through action on the environment and the discovery of properties etc depending on the stage of 'cognitive development'.

But amidst all this talk of opposing philosophies and ideals, is there anything that is common to both schools? When we present these two philosophies in such blunt terms as 'progressive' and 'traditional', new and old, we are giving the impression of two schisms. It is important to note that a 'progressive' education is not favourable to a 'traditional' education simply because it implies the term 'new' as opposed to 'traditional' or 'old'.

As John Dewey stated...

> **the fundamental issue is not of 'new' versus 'old' education, nor of progressive against 'traditional' but a question of what anything, whatever, must be to be able to be worth of the name 'education'. The basic question concerns the nature of education with no qualifying adjectives prefixed (Dewey, 1963, p. 90).**

It would at first glance appear that the two schools of philosophy-Traditionalist and Progressive should meet somewhere on their views on educational practice or theory i.e. their respective *means* and *methods* may differ significantly but perhaps they are two different roads to the same end, whether that end is the development of the child's potential to the full in relation to opportunity for future employment or whether it be the development, holistically of the children , whether it is to help students realise their potential as individuals / citizens or as workers / labourers.

Importantly, though, there are very distinct differences between the two philosophies in terms of what each system desires and what each shall produce.

Next shall examine the implications of each philosophy and the reason why each employs the means particular to its nature.

Social Perspectives:

It is perhaps impossible to fathom the power and influence of education upon society. If we remember as Dewey said, that the classroom is a collection of individuals and society is an organic union of these individuals, the delicate nature and relationship between the individual and society becomes apparent. Children entering a classroom / school become products of society, then later, when leaving this system they are the fruits of this society since they have been 'schooled' through a curriculum which has been designed by that same society.
This relationship between school and society has been actively manipulated for a long time and while political parties like to pretend there is a certain amount of apolitical rhetoric within curriculums and documents on education the reverse is in fact true.

> **It is obvious that any social institution that performs such a significant role is not going to be allowed to roam freely within political structure. Groups and individuals which possess the resources of power and influence exert, or will exert, when they feel the occasion demands, tremendous efforts to shape and mold the system to their way of thinking and to tailor the curriculum to meet their special technological and specific needs (Van Scotter, 1991, p. 130).**

Although the 'White Paper' on education states its philosophy and aim as "nurturing the holistic development of the individual and promoting the social and economic welfare of society" (White Paper,1995), it is more intent upon the provision of a labour force through 'schooling', as obviated by the conclusion of the sentence; "including the provision and renewal of skills and competencies necessary for the development of our approaches" (ibid,1995) i.e. the perpetuation of their political ideologies.
In 1966 the 'Investment in Education' publication was released marking a

> **distinct reorientation in Irish Education. In the wake of the adoption of a programme for economic development, with its commitment to economic growth and export-oriented industrialisation, *the educational system would hence forth be assessed by its capacity to facilitate the achievement of these new economic objectives* (Clancy,1995,p.479).**

Not surprisingly, this publication was funded by O.E.C.D. and the Irish Government.
So, where does the child stand in all this? The truth is that he/she is buried among all the talk of 'exported orientated industrialisation of education' and the 'achievement of new economic objectives'.
The child is considered secondary, society is considered primary.

In the traditionalist approach to education

> **Sociologists have taken the total society as their unit of analysis and have sought to understand the contribution of the educational system to the maintenance and development of that society. This macro approach tended to leave the social processes and internal dynamics of the school unexamined (Clancy,1995,p.479).**

While it would *seem* that the 'White Paper' on education would seem concerned with the child, there is no place for a child-centered education in such educational politics. They are all too aware of the influence education has or can have and employ 'schooling' which is the system of education instrumental for this mass-production of their prescribed society.

But 'schooling' and the traditional method of education has an even more basic role, in truth, it has a dual role.

1. **They are agencies of socialisation** i.e. the instilling of values or moral socialisa tion and skills.
2. **They are agencies of selection and evaluation,** with evaluation being, perhaps the most important aspect for the government i.e. it is a screening device for selection and allocation of individuals for the labour market.

> **They have provided the first line of training for corporate managers and technicians. At the lower end of the job continuum, the school sorting mechanism creates enough low achievers and dropouts to provide the abundant cheap labour that the economy requires. Overall, the schools hidden curriculum produces young people who will fit into the routine, docile and co-operative attitude of economic institutions. (Van Scotter, 1991, p. 162).**

Thankfully though, this is changing albeit shall be a slow process. Education is always slow to pick-up on the demands of the public. David Kearns of Xeorox and John Scully of Apple have both noted

> **The factory model that schools have operated with for over a century is obsolete. Just as businesses are abandoning top-down bureaucracies and assembly line producers, so must schools if they are to enhance, not hinder the productivity and competitiveness of our post-industrial economic system. Businesses no longer want only workers who adapt smoothly; they also need people with sufficient language and quantitive skills to be critical thinkers and problem solvers. (Van Scotter, 1991, p. 162).**

This is what 'education' will produce as opposed to the method of 'schooling'.

The 'White Paper in Education' states its aim as to "develop intellectual skills combined with a spirit of inquiry and the capacity to analyse issues critically and constructively"(White Paper,1995,p.4)

These aims are largely admirable and any system of education that is worthy of the term 'education' must be a child centred system of education. The practices though, of the White Papers curriculum are far removed from its aims. It pre-supposes that an environment it hopes shall be based on problem-solving etc. can be teacher-centred; we shall examine this later.

The trend in education is slowly changing, for the moment however, sociologists and educators when considering how they can improve education still employ a 'macro-approach' i.e. they take their perspective by looking at society and translating its shortcomings and needs into an already over-expanded curriculum. Again, the opposite needs to be considered, education should begin with the child and end with the child.(Clancy,1995,p.479).
We should look into the class-room as a society; as a mini-democracy and examine patterns of interaction but most importantly the needs of the child, how it learns, how it develops. This should be the starting point of any education.

Again, the reason education is not employed is political. Education helps students to analyse and develop a personal and societal awareness which is not favoured by those intent upon the perpetuation of ideologies and social control. "It is true that most schools do not encourage creative autonomous and enquiring behaviours, qualities that innovators and leaders possess. To do so would undermine the primary cultural mission of schools".(Van Scotter, 1991, p. 130). Person centred educations have been taken up by such people as Carl Rodgers and Freire and have found significant improvements in the positions of those involved but, detrimentally to politics a person-centred policy changes the politics of education.

It was Freire who stated "that if a dictatorship took over this country, one of their first acts - if they were at all intelligent - would be to jail me and others who hold a person-centred point of view."(Rodgers,1985,p.109). Although in context he was referring to a dictatorship, a person-centred education is generally not deemed of as favourable since "problem posing education does not and cannot serve the interests of the oppressor. No oppressive order could permit the oppressed to question"(ibid,1985,p.109). This questioning is a threat to any government, dictator or not.
Freire, is often engaged in a person-centred approach with older pupils who have often never entered a system of education. Concerning the nature of these oppressed persons

> **Freire has developed the realisation that only by letting the people face these problems or situations in their own way will true, self initiated learning take place. Gradually they become fully aware of the world and its problems; then they begin to seek answers. The issues which have come from the people return to them - not as contents to be deposited, but as problems to be solved.**
> **(Rodgers,1978,p.87)**

The work which Freire has often been engaged in is carried out with the oppressed in third world countries, but the principles and the benefits are universal to any age group.

Dr. David Aspy has collected 3,400 recorded classroom hours from 550 elementary and high school teachers and has used rigorous scientific methods to analyse the results of person-centred educations. He has significant consequential results between the two systems of education for all parties.

In terms of the teacher as 'facilitator', they develop a more positive self concept, they are more 'self-disclosing', more responsive to students and freer in their praise; it has also been found that they lecture less often (Rodgers,1985,p.87)

In terms of the student, the results are also more rewarding-as well as the students being more efficient in terms of higher cognitive requiring processes such as problem solving, the students IQ rate was higher thus the students showed 'greater gains in learning conventional subjects.' As a result of the students interest and joy in the method, there was a lower absence rate and the students were more involved at all levels.

These are all characteristics of the system of education that is 'schooling', that is currently employed in most countries in the world today. Importantly and insightfully, John Dewey expressed the truth that

> **There is always the danger in a new movement, that in rejecting the aims and methods of that which it would supplant, it may develop principles negatively rather than positively and constructively. Then it takes it clew in practice from that which is rejected instead of from constructive development of its own philosophy. (Dewey, 1963, p. 14).**

Thankfully though, if the negative results are enough to implicate the current Traditional education system or philosophy of education, the resulting end of a new philosophy of education as aforementioned is enough to justify its existence as a valuable philosophy of its own.

Chapter 2 :

The Alternative Curriculum

A child centred approach

> **I take it that the fundamental unity of the newer philosophy is found in the idea that there is an intimate and necessary relation between the process of actual experience and education (Dewey, 1963, p. 20).**

When John Dewey expressed this necessary truth, he not only focused the attention of the education world upon the most crucial denominator of any philosophy of education deserving of such a title; but by insisting that all genuine understanding comes only through the child's personal experience, he was responsible for the unification of many different philosophies of education which are child-centered and thus unfortunately termed 'alternative', among which two are particularly pertinent to this thesis: Progressivism and Humanism.

Perhaps though, more importantly he was instrumental in the unification of many different education philosophers with developmental psychologists i.e. he made the organic and necessary connection between the philosophical world of himself and Montessori with the theories of child developmental psychologists such as Piaget; philosophy and psychology were combined, as too were theory and practice.

These three educators have all not just insisted upon the value of personal experience or a child centred education but were also concerned with matching the child's cognitive ability to the method and manner of teaching, or vice versa. This had serious knock - on consequences for the suitability of the learning environment, the objects within that environment and the roles that those involved in these environments must now assume or even unassume.

These shall be discussed as central elements of the child-centered curriculum.

Learning through experience:

If we are to consider the life of the child, it is easily verified that it is fluid and to a large extent ego-centric.

> **The child lives in a somewhat narrow world of personal contacts. Things hardly come within this experience unless they touch, intimately and obviously within his own well-being, or that of his family and friends. This world is a world of persons with their personal interests, rather than a realm of facts and laws (Dewey, 1974, p. 5).**

This observation by John Dewey has too, been noted by the French child developmental psychologist Jean Piaget in his theories on the child's stages of cognitive development.For instance, Piaget identified this particular stage of 'personal interest and contacts' in the young child's life as the Sensorimotor stage which he theorised, through observation lasts approximately from birth to age two.

During this stage the child has yet to develop the power of symbolic representation and was thus termed the 'pre verbal infant' and it,s world consists of a shallow field of personal experience. "As against this", Dewey noted "the course of study met in school presents material stretching back indefinitely in time, and extending outward indefinitely into space" (Dewey, 1974, p. 5).

Piaget, Dewey and Montessori all recognised this unfortunate gap between the child's world and the nature of the traditional education system and all realised the importance of matching education to the child's biological and social life, and the importance of an experientially based education at all stages of an education, and all witnessed the vital and organic knowledge that experience or 'learning through doing' affords the child.

It was Dewey who realised that if a philosophy of education is to be effective it should begin with "a psychological insight into the child's capacities, interests, and habits". This is common sense and it makes sense that we should understand these principles of mental activity of which Piaget accounted; for if we understand the nature of the child and the processes of it's growth, then our teaching shall be more rewarding for all.

The results of Piaget's observation that make up his theories have filled books, been the source of numerous lectures, and have been the ground work for many philosophies of education, yet among his most important insights in relation to the curriculum which this thesis is based on are:

* **A students cognitive ability is developed and expanded only through the provisions of experiences that allow or stimulate thinking.**

* **Cognitive development is thus the result of the interaction of the child upon / within the environment with these stimuli.**

These insights are obviously very implicative then of the nature of the traditional school system. Any philosophy of education that is given vent in a curriculum that is to be effective should carefully consider Piaget's insights. The traditional method of education failed to address the principles of cognitive growth, designing the curriculum with little or no regard to the child's biological or social life and proceeded to model the child around this curriculum as opposed to considering the nature of the child which will dictate the curriculum.

Remember the child comes first, then if at all the curriculum, not the other way around: thus the curriculum as discussed here is termed child-centered as it is designed in harmony with the principles of the child's growth and since this growth, I believe, is accommodated through experience and 'learning by doing' this too is the nature of a child-centered curriculum.

Piagetian theory states that 'action is prior to thought - thought is internalised action'. Montessori stated that 'learning occurs physically, mentally, and sensorially'. Dewey noted that 'learning is active, it involves reaching out of the mind, it involves organic assimilation starting from within,. All three educators, though in particular Dewey, were "at the forefront of the battle to abolish the old tradition that schools which society supports were merely charged with the somewhat static duty of handing on to each new generation a relatively fixed body of subject - matter items"
(Dewey, 1974, p. vii).

But this statement suggests nothing in itself. In fact, it raises questions, the most prominent being' if fixed subject matter is to be abolished in the interests of the child, what is to be put in its place in the interest of the child?'

The answer was of course, opportunity and provision of the child's natural curiosity within the environment through assorted stimuli which would dictate and allow for this necessary experience leading to knowledge.

> **They must operate, and how they operate will depend almost entirely upon the stimuli which surround them and the material upon which they exercise themselves. The problem of direction is thus the problem of selecting appropriate stimuli for instincts and impulses which it is desired to employ in the gaining of new experience (Dewey, 1974, p. 18).**

I am not going to prescribe such stimuli. What is more urgent is to address the issue of method i.e. if the child is now going to be involved in what Montessori termed an 'auto-education', what then is the role of the teacher?. The truth is of course, that the teacher is still a necessary element of this process of the child's experience.
A source of contention with the Traditionalist's methods philosophies of education concerning a child-centered approach is that surely this freedom on behalf of the child, this fluid approach accommodating the child's impulse to act upon the environment will result in an

unplanned improvisation at the expense of the child.

There is, however, no evidence of this and to suppose such a situation is to obviate a misunderstanding of the Progressive method which the traditionalist philosophers often make.

On the contrary, a more direct and sensitive understanding on behalf of the teacher is required, and as previously stated, an in depth knowledge of the stages of cognitive ability on behalf of the teacher is required.

Piaget's system of educational theory was concerned with such questions as 'How do children learn?' but more to the point, 'How can we facilitate and accelerate this development?' And this is the issue upon which all tutors involved in a child-centered approach must now contemplate. This concept of external direction but internal motivation rather than external control *of* motivation were issues which Montessori often postulated within her numerous writings on the subject.

> **Hence, what concerns him, as teacher, is the ways in which that subject may become a part of experience; what there is in the child's present that is usable with reference to it; how such elements are to be used; how his own knowledge of the subject - matter may insist on interpreting the child's need and doings and determine the medium in which the child should be placed in order that his growth may be properly directed (Dewey, 1974, p. 23).**

This provision of the child's experience has some serious effects upon the standard classroom as the environment of learning. Since in a child-centered education the child's curiosities are accommodated for , the standard furnished classroom becomes obsolete. Where as before this contained rows of desks - desks for listening and promoting the inert passive posture of the child, the new environment shall house more room for movement and action.

Learning too, would often occur outside of the school and the life of the child would extend out of doors, to the garden, surrounding fields, and forests. He would have his excursions, his walks and talks in which the larger world out of doors would open to him" (Dewey, 1974, p. 35).

It would be logical to proceed now onto 'why', i.e. why an education that is child-centered is based on problem-solving and experience. Fortunately the two are inseparable.

The term 'child-centered' is *implicit* whenever we are discussing a philosophy of education which is based upon experience. Is it possible for example to conceive of a system of education which is based upon experience i.e. the organic and necessary interaction of the child within its environment, to be teacher-centred?. Obviously not, when a system such as this (teacher-centred) relies on text books of prescribed information for its source in an environment where the teacher is considered the authority and the knowledgeable one, who's duty it is to hand down knowledge. This can not possibly be conceived of as child or person-centred. This theory also works in reverse.

An approach to learning which is authoritative in nature which results in no other opportunity for the student to be anything other than docile and receptive, which is based solely on the intellect, which operates on the lowest level of trust and empathy possible between the

authoritative figure and the recipient since any interaction is limited to 'any factual information which the work in hand requires'(Carroll,1996p,6) are not characteristics conducive to the holistic growth of an individual and be termed 'experience-based'?.

Education and Real Life

> **I deeply feel that the traditional teaching is an almost completely futile, wasteful, over - rated function in today's changing world. It is successful in giving children who can't grasp the material a sense of failure. It also succeeds in persuading students to drop out when they realise the material taught is almost completely irrelevant to their lives (Rodgers,1983,p.137)**

We have already discussed the importance of matching education with the child's biological life in terms of such theories as Piaget's stages of cognitive development. Here we shall discuss the importance of matching education to a child's social life i.e. education being co extensive with the life of the child.

When we consider such terms as the 'school' and the 'society' as separate elements, we are making an all too common mistake, as when we consider the 'child' and the 'curriculum' as dualisms.

We have already discovered that the 'child' and the 'curriculum' are one, since the child is the start, middle and end of the curriculum which has been designed in harmony with the child's stages of growth, the child, then is the curriculum made flesh,(the curriculum being a type of blueprint of the child). An unfortunate mistake to make would be to consider the 'school' and the 'society' as separate elements. Again, though as in the child and curriculum then are in fact one i.e. the school is a collection of social individuals and of course society is a collection or an 'organic union' of these individuals.

How is it then that the traditional education system can release students into a society with an armour of information at their disposal, yet have no real experience of the objects or concepts they have memorised or the ability to apply this knowledge to solving new problems? Part of the problem, as we have already seen, has to do with standardised testing.

> **The constant use of worksheets and tests can have the seductive and pernicious effect of leading children to believe that the most important reason for reading and doing math is to pass tests or to be able to hand in a completed worksheet. Even more disconcerting is the fact that many children learn to like the security that one can always know when one is right or wrong is a seductive comfort in a world characterised by ambiguities, trade - offs and dilemmas. (Eisner,1982,p.11)**

But the main reason is that students leaving the traditional education system *may* be knowledgeable of information and facts, yet these are not applicable to their personal experiences because the system itself did not centre its philosophy around learning through experience and the application of that experience to new problems and solutions.

> **From the standpoint of the child, the great waste in the school comes from his inability to utilise the experiences he gets outside the school in any complete and free way within the school itself; while on the other hand, he is unable to apply in daily life what he is learning at school (Dewey, 1974, p.75).**

If education then, is to prepare the child for real life, should the classroom not be an extension of this life? It is important to realise that a child is a social being from *birth* and not from the moment it leaves school.
The purpose of school should be

> **To become the child's habitat, where he learns through directed living, instead of being only a place to learn lessons having an abstract and remote reference to some possible living to be done in the future. It gets a chance to be a miniature community, an embryonic society (ibid, 1974, p. 18).**

The problem as we have already discovered with the traditional educational system is that the children may memorise equations etc. through drill and rote memorisation, but they have no *real* experience of what they have learned. The question then begs, where did these children gain their knowledge? The answer is: outside school. You may have noticed earlier that I said 'in education the child comes first, then if at all, the curriculum.'

The reason for 'if at all the curriculum' is that most learning happens casually, anyway - take for example our first language.

> **School is an institution built on the axiom that learning is the result of teaching. And institutional wisdom continues to accept this axiom, despite overwhelming evidence to the contrary. We have all learned most of what we know outside of school. Pupils do most of their learning without and often despite their teachers. Everyone learns how to live outside school. We learn to speak, to think, to love, to feel, to play, to curse, to politick, and to work without interference from a teacher (Illich, 1971, p. 42).**

Standardised Testing

> **One of the most effective ways to create an educational crisis is to develop a norm - referenced achievement test, administer it widely, and attach significant social consequences to the results**
> **(Eisner, 1982, p. 15).**

Perhaps one of the most damaging elements of any system of education is the frequent and mandatory testing of students knowledge. This often seems surprising as standardised testing is one of the central elements in almost all systems of education. But as we shall discuss, it is also the most crippling element in any curriculum and a major contribution to the systems downfall. These standardised tests have a number of negative effects for all parties involved .

Originating in World War I, testing was employed originally to determine the status of military personell. This method was however, quickly adopted by, among others, psychologists and educational researchers and applied to an over expanding school system.

> **With more and more children coming to schools from various socio - economic backgrounds, and with a widespread intellectual ability of children, tests were used to measure what children knew, what and how fast they could be expected to learn and even how they might learn best**
> **(Van Scotter, 1991, p. 160).**

In essence, they were employed to *predict* performance, tests were originally beneficial, employed in the students interest since they were tested before children entered school, the results being for the *educators* information only. Unfortunately what has happened is a complete turn around, testing is now employed, not just to predict performance; but also to *prescribe* with negative effects on the child, the tutor, and the curriculum.

> **This flow of events from test - scores to education goal, is of course the reverse of how tests should be used in educational practice. The standard version prescribes that one first establishes objectives, then designs a series of curricular activities through teaching and finally test or in others ways evaluate to determine if the goals that were initially formulated have been achieved" (Eisner, 1982, p. 15).**

Frequent testing and issue of certification are classic examples of form becoming content and all the children's efforts are placed and energies focused on passing these tests, on the staid acquisition of facts rather than gaining any genuine understanding of the subject matter. Thus quality of knowledge is decreased with emphasis focused on quantity.

Sadly, this form of testing has negative repercussions upon the ever - diminishing curriculum. Curriculum is eviscerated, reducing it to mere basics and factual knowledge e.g. the 3R's,

which even at that, are not being achieved in many cases, or at least a sufficient enough standard to justify the importance placed upon them.

Originally,even the latter testing was even in the benefit of the student. It was to increase the schools awareness and response to individual needs of the students. Yet again, is it not the opposite which is being achieved? When these test scores are made available to a public and then public attention is focused upon these results, it significantly effects the priorities of schools. When, as in many communities test scores by schools and grades are given publication in rank order to local publications, " . . . it is the rare school principle who shall be unaffected by the fear of being at the lower end of the continuum" (ibid, 1992, p. 14). This pressure is then transferred to the teacher.

Teachers too realise that a certain amount of prescribed information is to be assimilated by the students in a short period. This flow of events is contrary to what the latter testing was originally employed for - individual tuition.

Again and most unfortunately, this pressure is finally deposited upon the pupil. The student too, realising the pressure is often forced to abandon his own interests and personal abilities as often additional course work in subjects such as English and Math are taken, knowing that the achievement of higher scores in those areas result in a better opportunity in terms of college placement.

Obviously then, an alternative mode of assessment is due. In an alternative curriculum, this testing would assume a different form, with emphasis being diverted (and thus pressure) away from the student. If testing is employed, it should be reverted to what testing was originally entertained for: for the educators as a means of predicting how the system might be improved and /or to sensitise the educator to the individual needs of the pupil. Importantly, the results should not be made public!

A major reason that this form of testing has been employed pertains to the nature and content of the traditional educational system. The present system is operating solely on an intellectual level based upon the rote learning and acquisition of prescribed answers, thus proof of this acquisition of prescribed answers is easily reproduced in crude form of the written word since the source of the information was the same i.e. standards and subject matter handed down in the form of the printed word in books.

But a new system and philosophy of education that employs a more holistic person-centred system of education relying upon understanding through experience operating on a multi level cognitive and affective philosophy combining mind, body, and soul, is less tangible in terms of mere reproduction in written form as this system shall require genuine understanding on behalf of the pupil.

When the form of a class is fluid, employing a flow of learning experiences as opposed to prescribed information accumulation in printed form of text books, standardised testing is ren-

dered obsolete. This system also employs a more humanistic education providing for the persons natural desire and impetus for information / experience and knowledge, development of relationships and personal development. It is therefore naive to assume it can be measured such as it moves education away from what Friere termed mere 'packaging instruction with certification'.

Certification too, should be down played, for if the sole reason of education was the issue of certification, then is would not matter what we teach. This has often been objected to, with the argument being based upon the false belief that without rewards etc, the child is devoid of motivation to work towards anything. But is this not the point? The means is just as important as, if not more important than, the end.

The new system emphasises this with encouragement and praise given freely along the journey, not solely at the end, in the form of certification. Remember, children (and adults when they are in touch) simply love to make and do. It is in their nature and since this is also the nature of the new curriculum, it is in harmony with the child's natural inclinations; there is no need for the threat of punishment to make / produce work, nor of the reward of certification to ensure achievement.

Montessori noticed this in the method she employed.

> **"What interests him is finishing his work, not to have it admired, not to treasure it up as his own property. The noble instinct that drives him on is far removed from pride or avarice".**

i.e. the confidence that the child develops is developed within, not through printed affirmation of ability that is certification.

Chapter 3:

Philosophies of education

Plato

> **Plato's purpose was to help people live in such a way that they would not, in his phrase, 'defile their souls in the process'. Having characterised the nature of the state that would enable each kind of person to live the best kind of life, and having characterised ideal images of adults in that society, Plato turns to considering how one can achieve those ends. He turns to the problem of education (Egan, 1983, p. 27).**

Plato concerned himself primarily with two things, the ideal state/society and the ideal individual. In truth, like most educators he deemed them inseparable.
This philosophical project he set out to achieve was the result of the condemning to death of his friend and mentor, Socrates, who in 399 B.C. was found guilty and condemned due to his unwillingness to inform on his political enemies. This highlighted for Plato, the all too prevalent gulf that exists between the ideal society and the *reality* of that society.

> **The fact that Athens could condemn its noblest citizen to death did more than make a profound impression on him. It was to shape the course of his entire philosophic endeavour . . . To Plato, the death of Socrates was a striking example of the conflict that can exist between society as it really is and the true or ideal society (Gaarder, 1996, p.71).**

Another philosophic project with which Plato was concerned with was what he termed the 'eternal and immutable' (ibid, 1996, p. 71). He was concerned with these constants or philosophical truths, not just again in terms of the individual, but with what was eternally and immutably desirable in society.

These eternal and immutable truths were justice, courage, wisdom, and temperance, and furthermore, only a society that was ideal would consist of these qualities. Also, the individuals within the society would embody these characteristics and the ideal state would consist of warriors (courage), rulers (intellect), and workers (discipline).

Plato saw the solution to the achievement of both these problems in a system of education and then concerned himself with how he could progress people from simplistic knowledge based on crude perception through the senses to an altogether higher and more abstract form of thought which the ideal individual would contain. i.e. from the 'concrete particular' to the 'abstract general'. (Egan, 1983, p. 32).

"Plato sees the process of educational development as beginning in a world of sensations and the manipulation of concrete objects and leading by degrees to sophisticated abstract thinking"(ibid, 1983, p. 32). He then theorised in a sense, stages of development among which individuals must proceed to achieve these ends of abstract, superior intellectual thinking.

These were not stages of development as described by Piagetian or Montessorian philosophies of cognitive growth, rather they were stages of study which the individual must proceed along during his life.

> **He does not give us a distinct theory of development in the manner of psychology, but rather deals with individual development in terms of the sequence of what should be learned and how the teaching might be conducted i.e. an educational theory with a developmental form (ibid, 1983, p. 43).**

This curriculum was not to be solely a matter of intellectual endeavour, for it was a combination of scholar, warrior, saint and athlete in the individual, with each aspect in proportionate harmony that would produce the ideal citizen (Egan, 1983, p. 33). Therefore the curriculum involved such subjects as physical education (dance and gymnastics, diet and nutrition) alongside storytelling and military training in parentheses with intellectual subject matter such as maths, geometry, harmonics and astronomy.

He obviously recognised the need for a balance too, not just between the intellect and the affective in the individual, but also between the scholastic and the moral or rather, the characters intellect and the character of the individual.

> **An academic program that leaves character development to chance would seem foolish to Plato; and an outdoor education programme justified in terms of physical gratification or as romantic exhilaration would seem close to sacrilegious (Egan, 1983, p. 51)**

The following is a short list and description of the Stages of Development:

STAGE ONE: Eikasia

This first stage Plato described as characterised by simplistic perception of concrete material i.e. the belief that the sun and moon are the same size simply because they seem so in the sky. This form of thinking is a superficial kind of association/associative thinking. (Egan,

1983, p. 30)

At this stage, particularly, Plato stated that education should be fun and pleasurable without elements of mere rote learning etc, thus the content of the curriculum at this stage is concerned mainly with . . .

A) **Cultural initiation in the form of stories** etc, which portray characters whom best exemplify the heroic, courageous characteristics that the individual would be required to display later on.

B) **Physical education** in the form of dance and diet to urge self discipline, courage, perseverance and strength which would be required in combat at a later stage. (Egan, 1983, p.34-35)

STAGE TWO: Pistis

Acceptance of culturally accepted norms or conventional beliefs as opposed to any real level of enquiry are the common characteristics of the individual at this stage. Still, though, Plato perceived that the stage of 'pistis' (meaning 'belief') was an improvement over the previous stage of 'eikasia' (meaning likeness) since it was less accepting of simple appearances.

Curriculum content still involved physical education in terms of dance and gymnastics as the primary disciplines, though the basics in geometry and astronomy were to be studied in preparation for the next stages, or rather as intellectual stimulants to propel them onwards.

Note: These two stages can be grouped together since they are 'limited to opinions' and 'not implanted by rational instruction but by persuasion and conditioning; equally they are amenable to being changed not by reasoning, but by persuasion and conditioning' (Egan, 1983, p. 31).

STAGE THREE: Dianoia

Here Plato's wish for the individual to progress from the concrete to the abstract becomes more of a reality as, at this stage the student begins to recognise that "models, diagrams, etc. are merely representations of things that are properly dealt with in abstract terms i.e. hypotheses as distinct from fundamental principles" (Egan, 1983, p. 31).
The curriculum, then at this stage reflects this mode of 'Dianoia' (thinking) in increasingly abstract terms with subject matter consisting of astronomy, mathematics, and solid and plane geometry.

STAGE FOUR: Noesis

The final stage of thought is more reflected in thinking in a 'sophisticated manner with abstract entities' (ibid, 1983, p. 32) than prescribed through curriculum content. The application of this mode of thought and form of enquiry can be applied to any intellectual problem of

subject.

Plato's position on Schooling versus Education

Plato, it could be said, occupies a unique position within the 'schooling versus education' debate. While it is true that in terms of 'schooling' he considered an ideal, then like traditionalists, designed a sequential based curriculum along which students were required to progress without reference to any cognitive needs. Under scrutiny however, the fact emerges that Plato was definitely an educator and cannot be accused of 'schooling' for the following reasons:

* Plato never advocated education as solely an intellectual affair as his curriculum involved gymnastics and dance and also a much broader range of subject matter not normally found in traditionalist education which most people would consider as the 'educationally exotic' i.e. the study of harmonics and astronomy.

* This system of education would result in a personal awareness on behalf of the student and provided the impetus for the continuation of learning not found in the method termed 'schooling' e.g. A student progressing from the first stage of 'Eikasia' to the final stage of 'Dianoia' has an awareness and a knowledge applicable to real life as his understanding has been nurtured and directed along this progressively more complex, abstract stages of tuition.

* Although his theory or curriculum was not formed in respect of the natural sequential development inherent in children as recognised by people such as Piaget and Montessori, (which is the main argument levied against him as proof of endorsement of 'schooling') his developmental progress was not designed solely for children, but could be embarked upon at any age.

* Plato was not merely involved in the description of an ideal, then prescription of a means. He actively pursued the attainment of such and ideal. "He was not interested in merely describing and ideal, much of his energy went into seeking ways of approximating the ideal as closely as possible in reality" (Egan, 1983, p. 26).

* We must consider the political, social and intellectual climate of the time. "Plato wrote with an ancient city-state in mind, whereas our interest is in producing people for modern industrial societies" (ibid, 1983, p. 28).

* What is usually termed Plato's curriculum is rather a proposed underlying structure to an ideal curriculum. i.e.

> **Plato did no set out to specify in detail an ideal curriculum. Rather, he wanted to establish a set of principles upon which such a curriculum should be built and be resorted to particular recommendations only to clarify those principles (Egan, 1983, p. 33).**

John Dewey

John Dewey, the American educator born in Vermont in 1859, is often termed the Father of Progressive Education. This is not to say that he was the first to advocate the child-centered curriculum with 'discovery learning' and active involvement as an integral part of a child's education. Educational philosophers and developmental psychologists alike have long realised its value. "The recommendation that children be active discoverer's while having obvious educational merit did not escape Plato, nor the Egyptians, nor Montessori, Isaac, and many others" (Egan, 1983, p. 113).

This is of course not to say that his writings are unoriginal, on the contrary, there is a freshness about his insight concerning the nature and relationship between the child and the curriculum and the school and society which was catacylismic to the American intellectual reorientation during the mid-twentieth century. "He was one of the few individuals whose new outlook on man and society did more than a little to accelerate the movements which has made the twentieth century intellectually what it is"
(Dewey. 1974, p. xii).

Granted, we have already touched on how anyone concerned with education is essentially a 'social engineer', Dewey's philosophy was particularly pertinent to the society in which he lived and even today his writings retain the freshness of insight and perhaps more unfortunately an urgency about them when applied to the present educational and social climate.

> **"It is also important to remember that it was written in a flush of hope when this new century seemed to be starting out on a quiet, naturalistic, and evolutionary progress toward gradually greater and greater human enlightenment . . . He wrote from a heart that was full of faith and energy when the pages of our violent and bloody century were still uncut"**
> **(Dewey, 1976, p. xii).**

Many of Dewey's educational philosophies have been influenced and inspired by the writings of two men: Pierce and James whom formed the philosophy of Pragmatism.

Pragmatism is a method of philosophy which concerns itself with the solving of problems of an intellectual nature. It is in a sense a scientific philosophy accredited to the two American philosophers mentioned above which required action to produce experience which in turn represented reality. In essence, it was a scientific philosophy since truth of ideas was a property "independent of human experience" and was abandoned by The Pragmatists theorised that a theory was true if it worked.

By basing a system of education upon a philosophy that requires direct experience or reality, Dewey desired that

> **Philosophy will no longer be an abstruse subject of little or no value in the immediate concerns of the day, but will instead, be the overall directive force in developing new instrumental techniques for assisting the human organism in its struggles with its environment, and in building a better world in which some of the problems now confronting us will gradually be resolved (Popkin,1993,p.269)**

Dewey perceived this method of solving very real problems in terms of education and society, especially in terms of education . Dewey recognised that the ability to solve new problems should be an essential ability in education. By using the Pragmatic methods and rather than being trained in various disciplines, the child would be trained by being confronted with various situations which would have to develop methods for overcoming the difficulties that beset him" (Popkin,1993,p. 270).

Importantly, this ability to adopt to new problems is a central aspiration for democratic society.

> **A democratic society is one that is better able to confront new situations and try new solutions, since it does not have any rigid or preconceived ideology. It is essentially a system of social organisation that is open to exploration of new means for meeting difficulties. It is designed to evolve, to meet change, and to adapt to new developments (ibid,1993,p.270).**

Philosophical Perspective

Dewey was dismayed with the nature of the prevailing system of education during his life time. In many ways his theories were similar to Maria Montessori's. Dewey was increasingly disheartened by the manner of the Traditionalist philosophy, he felt that too many students were becoming machine-like in their acquisition of knowledge, their only prerogative being the sorting and editing of this knowledge with regard to what they deemed was important i.e. what they suspected the teacher wanted to her back.

In short, they has no real understanding of the underlying principle of their knowledge, its real meanings or its true value. What he called for was a radical re-think of the Traditionalist system with its focus on fixed units of subject matter and therefore the predetermined route of experience of the child. Dewey realised the true value of any system of education or stimuli in the educational environment was reflected in the impetus with which it pushed the child towards new understandings and experiences. Therefore, the route to the end is fluid.

> **Abandon the notion of subject matter as something fixed and ready made in itself, outside the child's experience; cease thinking of the child's experience as also something hard and fast; see it as something fluent, embryonic, vital and we realise that the child and the curriculum are simply two limits which define a single process (Dewey, 1974, p. 11).**

Although Dewey himself was not a psychologist and had no theories on stages of cognitive development that were his own, he was aware of their existence and recognised that it is neither in the child's interest, nor its nature to simply absorb / assimilate any degree of subject matter regardless of age and was in fact detrimental to the child to presume so.

> **"It will do harm if child study leaves in the popular mind the impression that a child of a given age has a positive equipment of purposes and interest to be cultivated just as they stand" (Ibid, 1974, p. 15).**

Education had neither meaning nor positive outcome if it negated the truth of constant internal organisation and re - organisation which is the nature and reality of the young child's mind. Education, then was redundant if it failed to address this cognitive evolution."Its task is in the problem of viewing the education of the child in light of the principles of mental activity and processes of growth made known by modern psychology" (Dewey, 1974, p. 96).

Progressivism and Traditionalism reach a peak in their opposing solutions to the most appropriate means and end of education during Dewey's lifetime with Dewey spearheading the movement that was to be termed 'Progressive'. With its focus upon the child itself, Dewey

agreed with the emphasis of Piaget that development was preferable to education and with Montessori in that self - realisation was the end which the child was constantly working towards.

> **The child is the starting point, the centre and the end. This development, his growth, is the ideal. It alone furnishes the standard. To the growth of the child, all studies are subservient; they are instruments valued as they serve the needs of growth. Personality, character, is more than subject matter. Not knowledge or information, but self - realisation is the goal (Dewey, 1974, p. 9).**

This self realisation could only be facilitated in a manner not unlike Montessori's method and was bound to be misinterpreted with its emphasis upon the freedom of the child and an 'open classroom'. Dewey however, in a sense reached a compromise between the two opposing schools of education,(Progressivism and Traditionalism) and contrary to belief , his emphasis on experimental and interactive learning did not necessarily mean a passive or spectatorial role of the teacher, rather he advocated a closer relationship between the two with a greater psychological insight on behalf of the teacher into the child's life in a .similar manner to what Montessori believed- less intrusion ,more intuition.

Although Dewey believed in freedom for the child, he did not advocate complete disregard and realised the danger in interpreting the term freedom' in education as mere chaos. "Nothing can be developed from nothing; nothing but the crude can be developed out of the crude - and this is what surely happens when we throw the child back upon his achieved self as finality" (Dewey, 1974, p. 18)

This was a philosophy of freedom, but with direction in mind, requiring the child to act upon his environment as opposed to simply humouring the child's crude interest in activity. The teachers role is again, to direct the child towards a greater realisation, to provide real experience and real objects through which the child shall gain an organic connection resulting in a truer understanding than previously possible in the traditionalist method.

> **If you simply indulge this interest by letting the child go on indefinitely, there is no growth that is more than accidental. But let the child first express his impulse and then through criticism, question, and suggestion, bring him to consciousness of what he has done and what he needs to do, and the result is different (Dewey, 1974, p. 40).**

Again, the environment is central to an effective education. Dewey envisioned an environment containing real tools and equipment in rooms such as music rooms, woodwork rooms, gyms and playgrounds, etc, i.e. through the provision of as much experiences as possible, we will bestow more learning than previously thought possible. This provision of subjective experience and the knowledge gained through it is ideally applicable to new problems encountered in fresh experiences and problem solving.

Piaget

> **American educational practice is generally based upon the premise that knowledge is something that can be directly transmitted from teachers and books to students. When knowledge is not required, there is assumed to be a problem with the student (Wadsworth, 1984, p. 186).**

Although this statement is referential of the American educational system, the word 'traditionalist' could easily have been substituted with the same effect. As previously discussed, the traditionalist philosophy places its faith in this transmission while ignoring the child's natural processes for the acquisition of knowledge. Piaget's theories however, on the child's cognitive needs and the assimilation of knowledge into these structures have important implications for educational philosophies, as he discovered that the mind is not, as once thought of as an empty vessel in need of filling, but rather like the body, it has its own structures with its own needs for its construction.

Importantly too, he discovered that the child's cognitive development depends of the child's interaction on the environment and further more, these cognitive structures are only developed through action in the environment.

"The most important and revolutionary implication of Piaget's theory is that children construct knowledge from their actions on the environment. Physical knowledge is constructed through actions or objects" (ibid, 1984, p. 186).

Four Basic Concepts of Knowledge

Piaget conceptualised four basic concepts of knowledge which are vital to the child's intelligence.

Schema:

Concepts and categories that the child develops over time i.e. weight, cold, speed, bird, through interaction on the environment are termed schema. To simplify this Wadsworth states that they can simplistically be termed 'index files'. Thus the child would have four different schema / files for each of the above concepts of weight, bird, cold and speed (Wadsworth, 1984, p. 10-14).

Obviously then the child at birth has no schemata, has relatively few at about one and as she gets older, not only do schemata /concepts become more abundant, but the child is able to differentiate with a greater level of detail, etc, between scheme (ibid, 1984, p. 13).

Note: Unless the child truly understands the concepts he is dealing with he will not develop schema as well as possible, i.e. there is a vast difference between knowledge and true understanding as between memorisation and comprehension.

Assimilation:

The child is forever (through its interaction with the environment), creating new schema (discovering new concepts) or integrating these new concepts into schema. 'Assimilation' is what Piaget termed this "cognitive process of placing new stimuli into the existing schemata" (Wadsworth, 1984, p. 14).

Accommodation:

This refers to the "creation of new schemata or modification of old schema" (ibid, 1984, p. 15). Without the ability to accommodate all the new information and concepts that the child is discovering the child would end up with a large amount of indifferentiated schema.

Equilibration:

Equilibration is the result of the assimilation of a new concept or 'schema'. Dis-equilibration occurs when the child in the present comes into contact with a piece of knowledge or concept etc, that is currently just beyond his level of comprehension (ibid, 1984, p. 16-19).

Stages of Cognitive Development

Perhaps the most important element of Piaget's theories on epistemology are his 'stages of cognitive development' along which Piaget theorised children progress both cognitively and affectively appropriate to their age.

1) Sensorimotor Stage (0-2 years)

The young child between birth and two years of age is the 'preverbal' child due to the lack of symbolic representation i.e. language. At this stage, the child is dependant upon 'sensorimotor' interaction on the environment as it, with its senses and muscles (sensorial and motor) it begins to accommodate its origins of intelligence and build schema or concepts. Frequently, the absence of language is mistaken for lack of cognitive development, however, assimilation and accommodation are occupying all the time.

> **The period that extends from birth to the acquisition of language is marked by an extraordinary development of the mind. Its importance is sometimes underestimated because it is not accompanied by words that permit a step - by - step pursuit of the progress of intelligence and the emotions as is the case later on.**
> **(Piaget, 1967, p. 8-9).**

As the child progresses through its life from birth to age two he or she will develop a number of schema and abilities which are vital for future growth, from basic reflexes such as grasping,

sucking, crying to:

* **object concept** i.e. object permanence.
* **concept of causality** i.e. awareness of the course of effects.
* **intentionally** i.e. conscious co-ordination and direction of movement.
* **affect** i.e. feelings

(Bybee, 1982, p. 57)

2) Stage of Preoperational thought (2 - 7 years)

This stage which gets its name from the term 'mental activities' which Piaget termed 'operations' lasts from age two to seven. Although the child has now developed language and the ability to label and form mental images the child will often find it difficult to solve mental problems -(preoperational), and is termed the 'intuitive student'. The child is not only termed 'preoperational' but also 'prelogical' and 'preconceptual'. The important distinction however, being the child is now relying less on activity as in the previous stage and more on symbolic imagery. "The child progresses from thinking actively as seen before to thinking and functioning in a more conceptual and representational mode" (Wadsworth, 1984, p. 70). An important element of maturation that occurs in the stage of preoperational thought is that although the child's actions are largely ego centric, he gradually becomes a more social being and as the stage progresses, increasingly communicative.

3) Stage of Concrete Operations (7-11 years)

Termed the 'practical student' the child now has the ability to perform and solve mental operations and follow logical patterns of thought. The name as we have already seen ('operations' meaning mental activities) involves the child now evolving logical thought processes (operations) that can be applied to problems that exist (are concrete). (Wadsworth, 1984, p. 113)

The child can also not only solve any mental operations, but can provide the necessary reasoning for conclusions reached. The child then, is obviously relying much more upon his mind as opposed to his senses and motor reflexes i.e. "Cognitive and logical decisions as opposed to perceptual decisions" (ibid, 1984, p. 113).

Although this stage marks great advances for the child both cognitively and affectively, there are still many limitations to its cognitive abilities. He is "limited to solving tangible concrete problems known in the present, they cannot deal with complex verbal problems involving propositions, hypothetical problems or those involving the future. (ibid, 1984, p. 114).

4) Stage of Formal Operations (11-15 years)

This is the last of the stages which Piaget identified in his theory on 'cognitive development'. In essence, it is the maturation of the child's cognitive structures, marking the cumulative growth of the child's cognitive structures.

"The adolescent with fully developed formal operations typically has the cognitive structural equipment to think 'as well as' adults" (Wadsworth, 1984, p. 136). Potential has been achieved, and this stage is primarily marked by the adolescents "freeing of thought from direct experience" (ibid, 1984, p. 136), though, obviously the accommodation, schema, etc, i.e. the content and function are improving all the time. The adolescent can apply all its accumulated logic thought processes to any class of problem inherent in any formal operation.

Now that we have outlined the basics of Piaget's theories on cognitive development we shall now look at the more practical side and move away from the theoretical side.
Piaget, like many parents, monitored and documented his own children's development, actions and responses. What was remarkable, though about Piaget's documentation was the detail with which he recorded developments. His enthusiasm is as undeniable; as opposed tho most parents casual scribblings on their child's actions with a view to viewing them later in life Piaget's accounts were constructed from an epistemological perspective and his involvement from an early age on biological matters etc. Having, however stated this detail etc with which he recorded the child's development , there are still a lot of misunderstandings about the nature of these stages which Piaget documented.

The main misunderstanding concerns the sequence of the stages. Piaget never suggested that these stages proceed in a linear sequence, each one succeeding the one directly before it, rather they develop in a sense, laterally.'He did not suggest that the stages occur in a linear manner, or that they move form discrete stage to discrete stage in development, but that they develop in continuum i.e. they flow along in a cumulative manner, each step integrating with the next' (Wadsworth, 1984, p.26). It is possible, for example, for children of the same age to be at different levels (cognitively) than their fellow classmates.

Conclusion

It is important to remember that Piaget's theories were purely descriptive and that no attempt was made by him to prescribe the application of these theories into curriculum design. It is obvious however that he is advocating a child-centered approach to eduction and although his research stems primarily from his childhood interest in biology and was epistemologically oriented, application and need of application of his theories into education are obvious.
Questions arise rhetorically from his writings in light of such theories as his stages of cognitive development. What is the sense of teaching children through role memorisation and memory if they are pro-requisitively, cognitively required to set upon the environment. When such developmental essentials are neglected, what are the consequences?
'Curriculum sequences should be designed with children's cognitive structures in mind. If curriculums do not take into account children's levels of conceptual development, learning without comprehension is going to be inefficient. Children cannot learn if they do not have the pre-

requisite skills'. Wadsworth, 1984, p.185)

Although educational practice may be intentionally sincere, it is always misguided unless it addresses the child's abilities in relation to what we are trying to teach. Essentially, our methods must be consistent with the child in questioning ability.

The value of Piaget's theories cannot be ignored; whereas many educators work with re0designing a curriculum with neglect to the child, Piaget ignored all this subjective theorising of curriculum content which is often at the mercy of every whim to fashion and went straight to the hearth of the matter discovering some central elements in the child's cognitive and affective world. He did not concern himself with external imposition but asked himself how do children lean and how can we best accommodate this learning process: He discovered the structure of children's intelligence and how it develops and he theorised two main fundamental propositions.

1 Development is primarily preferable to external imposition.

2 Learning can only be effective and schema developed when the child is involved in discovery-learning

The application, then is not so much as what to teach but how to teach it. 'Teaching' perhaps being the wrong word. Concepts, not just of an academic nature, but also of an affective and social nature such as responsibility, co-operation and discipline too, must be 'constructed' by children out of their own experiences and cannot be transmitted authoratitivley'. (Wadsworth, 1984, p.63)

Importantly, we must remember only to endorse Piaget's theories as a "frame of reference through which you can interpret children's behaviour" (Wadsworth, 1984, p.189).

Remembering that Piaget's theories were again, descriptive, not prescriptive and that 'stages are useful for conceptualising development and thinking about the characteristics of reasoning of children at various points along the continuum of development, stages can be a trap for our thinking' (Wadsworth, 1984, p.184).

Montessori

It was Montessori's education in psychology, anthropology, medicine and educational philosophy that combined to form her unique vision of a philosophy of education that would permeate much of the twentieth century and, furthermore, it was her background in these disciplines that combined to form her important belief that intelligence was neither solely hereditary or unevenly distributed as some educational theorists and philosophers had suggested, but rather was subject to the conditions contained in the surrounding environment (or lack of them)!

> **Intellect was, to her, the outcome of a unique set of interactions between heredity and environment, not in a fixed ways but in a developmental model, growth adapting to its unique environment with the latter providing (or failing to provide) appropriate nourishment at any stage (Gettman, 1987, p.x)**

Thus, when in 1896, after graduating from the University of Rome Medical School she joined the staff of the Psychiatric Clinic the chance was presented to her to visit the patients and she formed some central theories which she had the chance to examine in the two-year education of these children. Here her combined education in psychology and her own personal stress upon the importance of a free and loving environmental led her to 'believe instinctively that mental deficiency was more of an educational than a medical problem' (Ibid.,1987, p.1).

By basing her teachings upon those of the philosophies of Itard and Séguin,Montessori was so surprised by the children's progress that she applied for them to sit normal examinations given to children of the same age. These children progressed so rapidly that it would have been reasonable for her to be content with the success of her method. these results, however dismayed her in a sense, as she often wondered what was the problem with 'normal schools if the two short years of her improvised methods could so greatly improve the quality of the lives of what were deemed 'seriously disturbed' and 'handicapped' (Ibid.,1987, p2).

> **'While everyone was admiring the progress of my idiots, I was, searching for the reasons which could keep the happy healthy children of the common schools on so low a plane that they could be equalled in test of intelligence by my unfortunate pupils!' (Montessori, 1964, pp. 38-39).**

In 1907 she received the chance of trying her new formed philosophy of education on 'normal' children when she was appointed Director of a nursery in Rome. This nursery was to house roughly 50 children of ages three to six from the impoverished surrounding tenement buildings.

What was unique, concerning Montessori's methods she employed here (apart from the results) was that it was a philosophy of education formulated completely in respect to the children's

natural inclinations. While in charge of these children she never interrupted or intruded the education upon the children but, instead " Montessori's method developed and grew purely on the basis of what the children showed her about themselves" (Gettman, 1987, p.3)
By simply observing the children and their actions and offering materials to the children, but never imposing she found that she could facilitate and direct their education. The children, again in the nursery began to evident her intuition that children are naturally calm, creative, obedient etc. By finding that some materials were preferred more than others and that children preferred to take the activities independently Montessori developed many theories that were become central to her philosophy of education.

The Child's Absorbent Mind

> **The most basic principle in Montessori's theory of education is that the learning capacity of a young child is fundamentally different from that of an adult. (Gettman, 1987, p.3)**

Montessori came to teem this amazing learning capacity of the child's mind as the Absorbent Mind due to its ability to simply absorb and become engrossed in its environment; though to say that the child's mind is similar to a sponge is perhaps in a sense misleading. The child will absorb many different aspects of assimilate certain elements. i. e. although the child will absorb a number of auditory elements we find it has a special sensitivity for the human voice.
'How does it happen that the child learns to speak? We say that he is blessed with hearing and listens to the human voice. But even admitting this, we must still ask how is it that among the thousands of sounds and noises that surrounds him, he hears, and reproduces only those of the human voice'? (ibid., p.3)
Psychologically, the reasoning behind this child's absorbent mind is that the young child's mind form birth to age three (and to a lesser extent age six) is devoid of critical faculties or what we commonly know s 'conscious', thus the child's ability to simply absorb. This is also the reasoning behind the similarity of many children's personalities to their parents.

> **A child's mind is open like a sponge, taking in all the stimuli in its environment. The mind absorbs everything it can in order to develop. Before the age of six a child doesn't know enough to be able to reply on its own judgement and reasoning; its critical faculty is underdeveloped (a critical faculty is the ability to question, judge, analyse, criticise and very importantly compare). (McKenna, p.11)**

The Sensitive Periods

0-3 years.

Montessori was in agreement with Piaget that both cognitively and affectively, the first few years of life are the most important in regard to the child's future development.
The sensory impressions received in infancy and childhood become the warp and woof of mental structures' (Gettman, 1987, p.xi).

Therefore, play and exploration should be an integral part of the child's most formative years involving all the senses possible in light of the child effortlessly absorbing many different stimuli building up its abilities and skills etc.

> **The absorbent mind acquires nearly any impression, simple or complex, with equal ease and accuracy... involving the child imitation, movement and manipulative play to capture, vary and augment the available field for experience'.**
> **(ibid., p.5).**

Again, in line with Piaget, Montessori did not underestimate the amount of assimilation, accommodation or just plain cognitive activity that is underway in the pre-verbal infant simply because the child is unable yet to speak. If one was to compare the child of three to a child at birth, the cumulative effect of the child's exploration and play in the environment manifests itself in the human abilities, now apparent; transformation and cognitive development is occurring continuously.

3–6 years

This stage marks a distinct difference form the previous stage.

In the previous stage the child, although active in its environment was still to a large extent limited to response of stimuli. This stage marks a departure in the sense that the child can now consciously direct movement.

> **'By the age of three, the unconscious preparation necessary for late development and activity is established. The child now embarks on a new mission, the development of his mental functions' (Lillard, 1972, p37).**

'Before three, the functions are being created; after three, they develop'. (Montessori, 1964, p 164)

Contained within the two stages aforementioned, Montessori further identified six shorter stages of development which she termed as 'sensitive periods'. They mark the development of

certain faculties in the child's intelligence. During these 'sensitive' periods' the child is attracted to certain stimuli and environments more so than at other stages within its life and needless to say attention should be paid and allowance made. Again, in line with the nature of many of Montessori theories, these theories were not constructed with detached reference to an abstract ideal of the child and they forcibly applied in an authoritarian manner. This theory grew from an observation of the child's capabilities and interests along its continuum of development. 'She was able to deduce this rough order of development by noting which sorts of activities and experiences seemed to benefit, and for the older ones, seemed to appeal to the children most' (Gettman, 1987, p.7).

1–5 years

The first five years of the child's life are particularly important sensorially to the child's development and children should be encouraged to explore the world as much as possible through its senses. This sensory period is a period of sensory perception.

'It is through this sensory and motor activity that the neurological structures are developed for language. ...the child must be exposed to the world of human sound in order to develop his neurological structures for language'. (Lillard, 1972, pp. 34-35)

3 months – 5 1/2 years

During this stage the child is particularly sensitive to the human voice and develops gradually its language.

1–2 1/2 years

Detail is what the child will often find particularly absorbing during this stage. The child will often find itself more engrossed in small details, rather than, for example larger colourful objects or scenery. It is thought that the purpose of this sensitive period is to provide for attention and focus of consciousness later on in life.

2 1/2 – 4 years

Essentially, here the child will exercise control of will. The child's fingers will no longer end up in the child's youth accidentally but she will exercise intentionality i.e. movement is no longer involuntary, but a display of co-ordination of muscles and movement is exhibited. Repetition, too is often exercised.

> **For example, a child aged about three loves washing hands, not for the sake of getting them clean, but simply to be able to work on the manipulative skills involved : turning on taps, holding slippery soap, rubbing to make lather, and finger drying (Gettman, 1987, p. 9).**

2 1/2 – 5 years

This is a period of social relations and marks the awakening of social curiosities and interactions in the child. In a sense, this sensitive period is sensitising the child in preparation for the nature of his future intellectual environment and the child will often simply enjoy working alongside classmates. 'This helps to orient the child towards intellectual development after age six, which occurs mostly in a social setting and consists largely of the acquisition of social and cultural knowledge' (ibid., p. 10).

The child will also delight in observing norms or rules of behaviour such as table manners, settings and rules of social events.
'He attempts to learn manners and to serve others as well as himself. This social interest is exhibited first as an observing activity, and later develops into a desire for more active contact with others' (Lillard, 1972, p. 36).

As opposed the mature adult whom has already constructed his\her knowledge we have the newborn child with nothing except a blueprint of its cognitive structure in need of realisation. (Lillard, 1972, p36) The child at birth is brought into the world with no other purpose in its life but the fulfilment of these psychic requirements. Equipped, solely with this blueprint, the child will realise and fulfil this cognitive structure through absorption in its environment, incorporating knowledge along a predetermined route of activities. The means to attaining this destiny is not only predetermined by also pre-conscious and thus carries the child forward in a series of activities that serve to facilitate its 'Absorbent Mind' during these 'sensitive periods'.
The sensitive periods describe the pattern the child follows in gaining knowledge of his environment. The phenomenon of the Absorbent Mind explains the special quality and process by which he accomplishes this knowledge' (Lillard, 1972, p. 36).
It is widely known that many of Montessori's initial interests in education were stimulated and inspired by Rousseau, Froebel and Pestalozzi all of whom held the similar belief that the child has an innate potential and only conditions such as freedom and love could facilitate these. Montessori first witnessed the necessity of these conditions in her early years of teaching the many, impoverished three to six year old's in her class in Rome. 'By giving the children of the Case Dei Bambini an open environment in which to operate, Montessori was able to observe these natural laws at work in the children and to make a beginning in their identification.' Lillard, 1972, p. 37)
More importantly, though were many other qualities that Montessori came to determine as innate; which manifested themselves in this environment of freedom and love.

Conclusion

In light of the discovery of the child's ever developing inner cognitive structures, an awareness has evolved that if an education is to be truly effective, then it needs at all times to be sensitive to these developing structures. Piaget and Montessori did not invent these stages which the the child progresses through. They witnessed the gradual 'unfolding' of the child's abilities along this continuum of development which it is genetically pre-destined to travel, and the pre-requisite of action for the provision of the building of knowledge into these structures is crucial

The realisation that demonstration of concepts and transmission of knowledge etc. was no longer sufficient for the education of the child, but rather fostering of development became the basis of what is termed child-centered or a progressive education.
Throughout history the most memorable of educators have held that it is

> **crucial for the child to act in his or her world. Actively manipulating, creating and re-inventing... are imperative to the child's understanding. Genuine understanding occurs in the act of doing, not in telling children, nor even demonstrating to them. (Montessori,1991,p.240)**

It is only through a system of education involving 'discovery learning' can the true potential of the child be achieved, yet this element of active involvement or even stages of development are concepts which have yet to permeate the traditionalist philosophy of education, and we endorse

> **an education dominated almost entirely by the mediaeval conception of learning. It is something which appeals for the most part simply to the intellectual aspect of our natures, our desire to learn, to accumulate information, and to get control of the symbols of learning; not to our impulses to make, to do, to create, to produce. (Dewey,1974, p.26)**

Experience in the child's education is crucial to the understanding of the child and a progressive education is crucial, not just in terms of the rewards it affords the child (which are enough alone), but also in terms of the rewards for society.

It was Plato, whom in the Fourth Century B.C. stated that 'society is the individual writ large'. History has not recorded wether he was the first to state this, however, the insight that the society we live in is an organic union of the individuals who compose it has yet to be stated more economically and efficiently.

John Dewey and Montessori too looked to education as the most effective medium and environment for the regeneration of man kind and thus society with Montessori in particular believing that the widespread application of her philosophy could resolve many of the prob-

lems so much a part of society by never allowing these problems to surface in the child in the first instance.

> **If salvation and help are to come, it is from the child, for the child is the construction of man and so of society. The child is empowered with an inner power which can guide us to a more luminous future. Education should no longer be imparting of knowledge, but must take a new path, seeking the release of human potential. (Montessori,1963,p.p.2-3)**

This 'new path and 'luminous future which she so enthusiastically advocated did not consist of the handing down of the answers of the past as solutions for the the future, for the solutions of the future must begin with the future i.e. children and a child-centered education.

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