Introducing Anthropological Pedagogy as a Core Component of Twenty-first Century Anthropology: The Role of Anthropological Pedagogy in the Fulfilment of Anthropological and Sociological Objectives

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ABSTRACT

This paper proposes the creation of Anthropological Pedagogy as a distinct field of study within the framework of Anthropology, interfacing traditional Anthropology and Pedagogy with some pre-defined principles and objectives, chiefly designed to promote Anthropological goals and objectives through the medium of education. This paper proposes to lay the groundwork for what we believe will be an exciting and promising field, and we hope other researchers, scholars, Anthropologists and Pedagogists will take the concepts presented herein to their logical conclusion. This is based on the premise that there can be no quick fixes to complex and seemingly intractable issues, but that the ball must be set in motion nonetheless to replace superannuated axioms. This proposed field of study is distinct from the field of Educational psychology which deals with the psychology of learning, is much broader in scope than 'Anthropology of Education', and the relatively less-known field of Pedagogical Anthropology which was created over a century ago by Maria Montessori and others, even though there may be varying levels of overlap between them. This sub-discipline is proposed to be created with the fond hope that by combining the two crucial disciplines of Anthropology and Pedagogy, a new platform will be created for the wholesome furtherance of human welfare and interests, particularly long-term and global welfare through more scientifically structured education systems, which are designed to merge short-term local considerations with long-term global objectives. This approach includes within its ambit topics such as content fixation for societal benefit, long-term societal benefit, individual benefit and maximum psychological impact. Needless to say, it is integrated with the Theory of Mindspace, the Theory of Mind-orientation, Societal orientation and Cultural remediation. It also deals with the collection and analysis of meaningful metrics, consensus-building and mobilization of international opinion for the realization of the goals, and implementation of the principles of Anthropological Pedagogy.

I.   OVERVIEW OF ANTHROPOLOGY

Anthropology is a holistic science which investigates different aspects of man or Homo sapiens, possibly the single most successful species in the world till date, and integrates this study with a study of his forerunners and predecessors including hominins, hominoids and other primates to achieve a thorough understanding of the origins and culture of man. It is also the systematic study of humans as biological organisms, and of human culture, and encompasses the approaches of both the biological and social sciences for a wholesome synthesis between the two. It is an all-encompassing field of study and includes topics as far apart as the evolution of primates into humans (evolutionary anthropology), origin, classification and distribution of races, genetics, archaeology, anthropometry, paleoanthropology, ethnography, human ecology, cultural anthropology, economic anthropology, political anthropology, diachronic linguistics, synchronic linguistics and applied anthropology. Anthropology therefore deals with all aspects of human existence (Howard and Dunaif-Hattis, 1992), and its scope is so vast that it interfaces with a host of other sciences such as sociology, historiography, psychology, geography, social sciences and economics. However, the core fields of Anthropology are considered to be Physical Anthropology, Cultural Anthropology, Archaeology or Archaeological Anthropology and Linguistic Anthropology. The last of these in a strictly Anthropological context evolved in American universities, and is a sub-field with a lot of promise.

The word anthropology is derived from the Greek word 'anthropos' which means human being and 'logos' which means science. Anthropology therefore refers to the science of human beings (Barnard, 2000; 1). However, the term anthropology did not exist at that time and the word came into use only in the past couple of centuries. Paul Broca defined Anthropology as "The natural history of man". According to Haviland, Prins, Walrath and McBride (2011; 2), "Anthropology is the study of humankind in all times and places". Langness (1974; 1) defines anthropology as "The scientific study of human beings- i.e., of the human creature viewed in the abstract: male, female, all colours and shapes, prehistoric, ancient, and modern." According to the University of North Texas, "Anthropology is the study of human diversity around the world with a view to identify commonalities and differences in social institutions, cultural beliefs and communication systems". According to Barrett (1996; 3), "Anthropology usually has been defined as the study of other cultures, employing the technique of participant observation, and collecting qualitative (not quantitative) data". Clyde Kluckhohn likened Anthropology to a great mirror which enabled man to look at his own diversity. The 1822 Encyclopaedia Britannica on the other hand, defined Anthropology as a discipline devoted to a discourse on human nature.

Anthropology is also very closely related to sociology which may be defined as the "science of society". (L.F Ward and W.G Summer) August Comte, Herbert Spencer, Emile Durkheim, Max Weber and Karl Marx were the pioneers of sociology. Many Anthropologists also functioned as sociologists and the distinction between the two disciplines is often blurred. August Comte defined sociology as "The science of social phenomena subject to natural and invariable laws, the discovery of which is the object of investigation." According to Max Weber, "Sociology is the science which attempts the interpretive understanding of social action in order thereby to arrive at causal explanation of its course and effects." Morris Ginsberg states "In the broadest sense, sociology is the study of human interactions and inter-relations, their conditions and consequences." Sociology also forms a part of Social sciences which may be defined as "Disciplines which study social interaction, society or culture." (William P. Scott)

Anthropology is a relatively new discipline whose theoretical framework developed only in the nineteenth and the twentieth centuries. However, an interest in studying human beings can be traced to the time of Heredotus in Ancient Greece in the fifth century BC, who developed a great interest in alien peoples and may have been the world's first anthropologist. Heredotus travelled amongst Greek colonies such as those forming a

part of the Persian Empire, but wrote about other alien cultures mostly from second hand information. Other early contributors to Anthropology included Aristotle, Strabo, Lucretius (progenitor of the Three-age system of classification later refined by Christian Jurgensen Thomsen and Gustav Oscar August Montelius), Tacitus, Aquinas and Polo. Aristotle, arguably the world's first biologist, introduced philosophical anthropology, writing on human nature, and differentiating between man and animals. Strabo, a geographer, also wrote about distant places and far off lands just like Heredotus. He is known for his travels to Egypt, Ethiopia and Asia Minor. Some aspects of anthropology such as linguistics also evolved independently, in places like Ancient Egypt, Ancient India and Ancient China through the publication of notable works such as those of Panini. The voyages of early travelers and conquerors such as Hiuen Tsang, Fa Hien, Alexander the Great, Appolonius of Tyana and Megasthenes also stimulated interest in other cultures. Psammatichus of Egypt is regarded to be by some as the world's first linguist.

Interest in cultural studies can also be traced to the renaissance period of the fourteenth and the fifteenth centuries. In the 14th century, Ibn Battuta also wrote about his travels to distant lands which included both Muslim and Non-Muslim worlds. Similarly, the age of exploration gave a boost to interest in exotic cultures, and travellers like Vasco da Gama, Magellan, Amerigo Vespucci, Vasco Nunez de Balboa, James Cook and Christopher Columbus wrote about their experiences and encounters with distant cultures. The dawn of the Age of Enlightenment, the French Revolution and the Industrial Revolution gave a major fillip to anthropology and sociology. The French philosopher Baron de Montesquieu wrote about several exotic cultures in his work "The spirit of the Laws" which was published in the year 1748. Henry Maine and Henri Lewis Morgan's famous works "Ancient Law" (1861) and "Ancient Society" (1877) were based on their own investigations and travels. Colonialists and missionaries also wrote about their encounters with other cultures, but their endeavours often had selfish, ulterior motives. Cultures were often labeled primitive, savage, barbaric, pre-literate etc, and not even the most eminent of Anthropologists were free from Eurocentric bias. In France and Germany, anthropology took off in the seventeenth and the eighteenth centuries, but other names such as ethnology, Volkskunde, Volkerkunde were usually employed. Early attempts to establish anthropology as a science can also be traced to the Italian philosopher Giambattista Vico, Montesquieu, French philosopher Denis Diderot, Jean le Rond d'Alembert, Marquis de Condorcet and Jean-Jacques Rousseau. The German Philosopher Immanuel Kant formally identified Anthropology as a field of study which traced the progress and cultural development of mankind in 1798. (Louden, 2006) In English, the word 'anthropology' can be traced to the year 1805 (McGee and Warms, 2012; 6). Anthropology eventually began to adapt to local interests and North American Anthropologists, for example, began to show a great deal of interest in the culture and customs of native North American people.

Anthropology also owes a great deal to revolutions in the evolutionary sciences. Edward Tyson and Friedrich Blumenbach made many contributions to Biological Anthropology in the sixteenth and the seventeenth centuries. Buffon, Turgot, Monboddo and Robertson also wrote about the diversity of man in terms of physical appearance and races. Charles Darwin's seminal work 'On the origin of species' which was first published in 1859, is largely considered to be revolutionary and path-breaking, and it played such a key role in the development of Anthropology that some scholars such as R.R.Marrett (1912) saw Anthropology as a direct result of Charles Darwin's and Herbert Spencer's ideas. Anthropology gradually gained respectability, and departments of Anthropology were eventually established in leading universities all over the world by professors such as Edward B. Taylor, Franz Boas and Paul Broca. Many articles, papers and dissertations were published in the field of anthropology in leading peer-reviewed journals and several sub-disciplines and branches were introduced in Anthropology. Many new theories have been developed in various sub-disciplines of Anthropology with the aim of providing a conceptual foundation and a theoretical framework, and older theories have been modified wherever necessary in the light of new evidence. By the dawn of the Twentieth

century, Anthropology took off with the advent of new methods and techniques, and many journals were dedicated to the field of Anthropology. Anthropology became an increasingly complex subject by the 1920's with path-breaking contributions by leading researchers of the day.

II.   HISTORY OF PEDAGOGY

The origins of literacy are in some ways tied to the origins of artistic and non-utilitarian behaviour. Some primitive forms of social learning were exhibited across various taxa and some octopuses and rodents even learnt to use tools. (Laland, Atton and Webster, 2011) other types of socially-transmitted learning were found in the Galapagos Finch and the Sea Otter. (Millikan and Bowman, 1967) Even though it is widely believed that lower Palaeolithic tools such as cleavers and Acheulean handaxes exhibited some non-utilitarian features as pointed out by Thomas Wynn, a specialist in Cognitive Archaeology, and others, artistic creativity first blossomed in the Middle Palaeolithic period with definite evidence of reversibility of parts and whole part synthesis and increased cognitive and artistic ability and personal ornamentation particularly in Neanderthal Man, and then manifested itself in more complex forms in the Upper Palaeolithic age. Palaeolithic art which includes Art Parietal (Petrographs and Petroglyphs) and Art Mobilier (Home art) have been found in different parts of the world. Some of the most impressive examples of polychrome cave art were Altmira in Spain which was discovered by Don Marcelino de Sautola, Lascaux in France which was discovered by a teenager in the 1940's, Bhimbetka, Adamgarh and Panchmarhi all in Central India. Home art dates back to 300000 YBP and a discovery of an engraved rib was made at Pech de L'Aze in France. Gravettian figurines, Venus figurines such as the Venus of Willendorf, the Venus of Hohlefels and the Venus of Neuchatel, and other Anthropomorphic and Zoomorphic figurines have been discovered in the Middle and the Upper Palaeolithic periods. Perhaps one of the most complex finds till date is the Hohlenstein-Stadel Lion-man figurine, dating to about 40,000 years ago. Unlike older finds, this figurine represents cognitive abilities such as metaphorizing, or the ability to convey ideas metaphorically and may have represented a step forward in non-utilitarian technology. [1] [2] [3]

One of the earliest traces of formal communications was the symbol systems of the Early Neolithic period. These may have evolved from even earlier potter's marks and non-standardized pneumonic aids such as symbols found on tortoise shells in Henan province in China. More advanced symbol systems were characterized by standardization, abstraction and use over a relatively large area, and symbol systems were ideographic and language-independent. Examples of such symbols were the Vinca Symbols of Central and South Eastern Europe, Tartaria symbols of Romania, the Gradeshnitsa tablets of Bulgaria and the Dispilio tablets of Greece. True writing using speech-recording began in the 4th Millenium BC was tied to political structures, and the need to maintain administrative and financial records. Examples of true writing were Cuneiform, and Egyptian Hieroglyphs and these scripts used different techniques to encode sound such as the Rebus principle and acrophony. These evolved into logo-syllabic scripts and alphabets by around 2200 BC and 2000 BC respectively. [4]   [5]

The early history of formal education remains fairly nebulous to this day. Early humans apparently were imparted no formal education at all, and a formal structured education is a relatively recent entrant in the history

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[1] *Wynn, Thomas 1989* The Evolution of Spatial Competence. *University of Illinois Press.*

[2] Bailey, Douglass (2005). Prehistoric Figurines: Representation and Corporeality in the Neolithic. Routledge Publishers. *ISBN* *0-415-33152-8*.

[3] An Introduction to Cognitive Archaeology Frederick L. Coolidge and Thomas Wynn, Current Directions in Psychological Science, 2016

[4] The History and power of writing Henri-Jean Martin The University of Chicago Press 1994

[5] Peter T. Daniels and William Bright. 1996. "The World's Writing Systems". Published by Oxford University Press. ISBN 0-19-507993-0

of human civilizations. Early humans may have imbibed the world through their own senses or may have been taught basic life skills by their parents and peers, though informally and in a rather ad hoc and an unstructured fashion. Training on tool making may have been imparted from the Lower Palaeolithic age and training on agricultural practices from the Neolithic age. The earliest formal school was probably launched in Egypt's middle kingdom under the direction of Kheti, treasurer to Mentuhotep II. Formal training was also imparted to a small number of scribes in Mesopotamia and Egypt given that literacy was the prerogative of a small section of the society which was the offspring of the privileged, and that early writing systems were clumsy to use and hard to master. For centuries, there was no education for women who were assigned more mundane chores, and given secondary status. There may have been some formal training for Indus Valley administrators but there is no easy way to attest this. In the Vedic period, Vedic knowledge along with some kind of medical knowledge was taught. A Gurukul system of education also existed but was limited to small groups of people.

During the Zhou dynasty of Ancient China, there were national schools which taught rites, music, archery, chariot riding, calligraphy and mathematics. In other early civilizations such as Greece, education was mostly private, and the nature of the education was decided by the parents. Aristotle also tried to bridge the gap between theory and practice, and introduced terms such as craftsmanship, reasoning and practice. The forerunners of modern universities were established in Italy, France and England in the 11th and the 12th centuries, teaching theology, arts, law and medicine. These were midway between monastic schools and modern universities. Islamic centres of learning were also established after the 8th century, and Islam also had its own golden age between the Eighth and the Fourteenth Centuries.

Most modern systems of education around the world are derived from Middle Age schools. For example, the University of Bologna in Italy and the University of Paris, founded in 1088 and 1160, had a Secular and a Christian basis respectively. There were other private schools though even these mostly had a religious basis. Most serious teaching was conducted in Latin, and courses were conducted on topics such as the liberal arts. Meanwhile, countries like Japan were isolated from the rest of the world. While literacy levels there were abysmally low in the 1600's, they increased gradually in the 1700's and the 1800's. The Japanese education system merged with the Western Education system after the Meiji reforms of 1868. Likewise, a Western style education was introduced in India in the 1830's based on recommendations by Lord Macaulay.[6]

Education was made compulsory in most European countries in the 1800's and the teaching of subjects like science and arithmetic was made compulsory. Most states in the USA too made education mandatory in the late 1800's, and literacy rates hovered at around 90%. However, most other countries in the world lagged badly behind. In India, for example, it was believed that no more that 20% of children attended school in 1900.

Today, most countries in the world have made education compulsory, even though the quality of education varies widely. More children are going to school than ever before. The percentage of population without any schooling decreased from 36% in 1960 to 25% in 2000. This percentage however varies widely from context to context, and female literacy trails behind male literacy in most regions. Developing countries are making rapid strides too: illiteracy rates in developing countries halved between 1970 and 2000, and are still falling.

Since the dawn of globalization and the emergence of the internet economy towards the end of the Twentieth century, the pace of percolation of technology has quickened considerably. Its effects on the job market, and on the demands on the educational system, have been great. Governments and specialists have undertaken various initiatives to identify key skills and implementation strategies to help students and workers towards meeting the demands of the rapidly changing workplace and economy. Twenty-first century skills are a

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[6] The History of Education, Patricia Rosof, Routledge 1982

series of higher-order skills, abilities, and learning dispositions that have been identified as a concomitant for success in 21st century society and workplaces by academicians, educationalists, business leaders, and governments. Many of these skills also encompass deeper learning as opposed to superficial or rote learning, analytic reasoning, complex problem solving, practical learning and teamwork, opposed to knowledge-based academic skills. [7] [8]

In education, the techniques of which are formally known as pedagogy, (Pedagogy may be defined as the method and practice of teaching, especially as an academic subject) a learned individual, often worthy of emulation, acts as a preceptor, and seeks to create an impression in the minds of a naive observer. In teaching, (1) the knowledgeable individual must modify his behaviour in the presence of a naïve observer, (2) incurring a cost (or at least gaining no immediate benefit) from doing so, and (3) the observer must acquire knowledge or skills more efficiently than it otherwise would. (Caro and Hauser, 1992) These characteristics are predominantly available in human teaching, and set the state for a scientific and a structured approach to teaching.

There was an increasing interest in educational methods and techniques throughout the Eighteenth and the Nineteenth centuries and attempts were also made to evaluate, compare and rank different teaching methods and create academic rationales for teaching methods. However, it is only from the second half of the twentieth century that pedagogy has begun to show irrefutable signs of morphing into a true science as it is admitted by the German philosopher Woftdeitrich Schmied-Kowarzik, Italian educationalist Franco Frabboni and Giovanni Genovesi.

Indeed the term pedagogy is now an all-encompassing term covering a breadth of topics such as content, teacher training and motivation, learning psychology and student motivation. It is both a theoretical and an applied science. According to Giovanni Genovesi:

"Pedagogy is an autonomous science because it has its own language and is aware of how to use it according to its own method and its own ends and, by this language, pedagogy generates a body of knowledge, a series of experiments and techniques without which any construction of education models would be impossible." 1999, p. 79-80.

Different learning theories and models have been applied during various periods in the history of pedagogy, according varying importance to theory and practice, often subordinating one of the two to the other. Learning theories may be defined as conceptual frameworks that seek to understand how students absorb, retain and process knowledge during learning. Classical theorists have included Plato of Ancient Greece and John Locke –the later proposed the idea of tabula rasa or blank slate. The theory of Behaviorism was developed by John Watson, B F Skinner (Skinner's theory was known as Operant Conditioning), Clark L. Hull (Systematic Behaviour Theory or Drive Theory), Edward C. Tolman (Purposive Behaviourism and Sign Learning) and others. According to the Social Learning theory, new behaviour can be acquired by observing and imitating others. This was based on work by Albert Bandura and Vygotsky. Constructivists believe that learners interpret new knowledge on the basis of what they already know or understand, and that new knowledge was built over existing knowledge. The Transfer of Learning Approach and Connectionism (Connection between sense impulses and impulses to action) were likewise proposed by Edward Lee Thorndike and others. The Theory of

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[7] The History of Pedagogy: Gabriel Compayre D C Heath and Company 1886

[8] The Origins of Pedagogy: Developmental and Evolutionary Perspectives
Amy E. Skerry, Department of Psychology, Harvard University, Cambridge, USA. Email: amy.skerry@gmail.com (Corresponding author).

Psychodynamics was proposed by Sigmund Freud who also touched on topics such as psychoanalysis and hedonism.

Other leading figures in the history of education have included Thomas Jefferson, who, in 1781 published his views on education in 'Notes on the state of Virginia'. His views included a local flavour to education, mandatory public funded education for three years and state support for deserving students from lower socio-economic backgrounds. John Dewey was another influential educationalist who also proposed the idea of functionalism. He was also associated with the philosophy of pragmatism. Dewey's ideas were presented in My Pedagogic Creed (1897), The School and Society (1900), The Child and the Curriculum (1902), Democracy and Education (1916), Schools of To-morrow (1915) and Experience and Education (1938). Dewey believed that education and learning were social and interactive processes, and students needed to interact with the curriculum, and participate in their own learning. Margaret Haley was another famous educator who focussed on a child-centred pedagogical approach and teacher training and development in the early Twentieth century. Other influential figures in education were Alexander Crummell, Mary McLeod Bethune, WEB DuBois, Daniel Payne, Inez Beverley Prosser and Booker T Washington. Oppressed themselves, they played a major role in promoting education among Blacks. Other interesting figures were Benjamin W. Arnett, legislator who fought or Black education, Jean Wesley Gilbert, the first Black Archaeologist and Daniel Hale Williams founder of the first school for Black nurses. [9]

Various learning theories have also been developed, since their early theorists such as Jean Jacques Rousseau (He proposed that humans went through different stages, and different types of learning were appropriate for each stage), John Amos Comenius (often considered to be the father of modern education- he supported equal education and learning in the local language), Johann Heinrich Pestalozzi (formulated several modern principles in education), Otto Friedrich Theodor Heinsius , Friedrich Froebel (who proposed the idea of Kindergartens), to Soren Kierkegaard, Max Stirner, Friedrich Nietzsche, Johann Friedrich Herbart (played a major role in constituting Pedagogy as a separate discipline), Immanuel Kant (who emphasized value, knowledge, human nature, learning, transmission, society and opportunity), Henri Bergson (perception and memory), Edwin R. Guthrie (Contiguous conditioning), and Stanko Gogala (Cultural Pedagogy) (Suchodolski, 1978). These were followed by the New School or the Alternative schools movement (which included Paul Goodman, Edgar Z. Friedenberg, Herb Kohl, Jonathan Kozol, and James Herndon), George Snyder's non-directive pedagogies (Snyders, 1974), Fernand Oury and Institutional pedagogy which focuses on the complexity of the learner and the unconscious factors which the learner brings to the classroom (Lobrot, 1967; Oury, Vasquez, 1967) and constructivism and contextual learning (This philosophy proposed by Jean Piaget, Lev Vygotsky and others proposes an ontological perspective of how humans make an interaction in relation between their experiences and their ideas). Contextual learning also places importance of cognition and problem solving. [10]

There also have been calls for a shift from a teacher-centric approach (with an emphasis on content and perceptions of teacher superiority) to a learner-centric approach (These include experiential learning or learning through experience (Proposed by David A. Kolb in the 1970's), hands on leaning and applied learning) (Brown, 2003; Crick & McCombs, 2006; Harris & Cullen, 2008) but progress and implementation have been somewhat tardy. Other more controversial approaches to pedagogy have included Critical Pedagogy which is based on works by Paulo Freire. This links learning with oppression and social justice and does not distance learning

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[9] Theories of Learning Ernest R. Hilgard Surjeet Publications, 2011

[10] Kennington, Richard., (1985). The Philosophy of Immanuel Kant. The Catholic University of America Press, Washington DC

from political realities and contexts. [11] Another emerging area is Dialogic learning which draws its power from egalitarian dialogue where validity of arguments and not association with power play a critical role. Educational Psychology is an interface between education and psychology, and this is a branch of applied psychology dealing with the problems, processes and products of education. It also tries to apply the psychological principles, theories and techniques of human behaviour in educational situations. [12] [13]

The first chair of pedagogy was established at the University of Halle in Germany in the 1770's. Johann Heinrich Pestalozzi of Switzerland and Joseph Lancaster of Britain also contributed to the study of pedagogical techniques. Under the guidance of Wilhelm von Humboldt a new university was founded in Berlin (University of Berlin) in 1809 and this university, which was later named Humboldt University, became the model for many other research universities in Europe.

In the 20th century, new trends in education have included Montessori schools developed by Maria Montessori based on a child-centric approach and development of Waldorf education first proposed by Rudolf Steiner. This approach seeks to stimulate intellectual and artistic creativity.

Pedagogy must provide a consistent and a seamless framework across sub-disciplines providing a cogent experience to the learner, but alas, well into the Twenty-first century, this appears to be nowhere close to fruition: the blame for this must probably be laid squarely on both inadequacies in theory and frameworks and gaps in implementation. According to work by Hofstetter and Schneuwly, pulls and pressures of, and the non-convergence of ideas and attitudes of theorists, professionals and policy makers may be responsible for some of the mess. [14] Hans-Georg Gadamer also lacks the fact that sound theorization and the development of new and relevant frameworks have lagged behind praxis in recent times. (Gadamer, 2000).

We have always emphasized the need for a pro-active approach to Anthropology, and one that is geared to inducing meaningful change or cultural remediation in societies, but one that is sensitive towards, and does not trample upon the sensitivities of peoples in different cultures and societies however big or small. We believe that pedagogy will come to play a significant and a meaningful role in the fulfilment and attainment of these objectives, and that the Twenty-first century will see a convergence of these two fields to the extent this is needed to achieve the necessary synergies to channelize human endeavour for long-term welfare maximization. Whilst the Author is not a pedagogist, he believes that Anthropological Pedagogy will constitute one of the core and important sub-fields of Anthropology, and must be utilized to the hilt to channelize human creativity for long-term human welfare maximization. Some proactivity is inevitable as purely laissez-faire approaches are fraught with disastrous consequences. This has been witnessed across a gamut of disciplines such as economics (The replacement of Laissez-faire economics with Keynesian economics) during the Great Depression and Environmentalism. Per our doctrine of Neo-centrism, short term and local interests must be subordinated to long-term and global interests but the two must be carefully merged such that short-term considerations are never misaligned with long-term considerations. At times, it may be justified to formulate exceptions based on

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[11] Freire, Paulo. Pedagogy of the Oppressed. New York: Continuum, 2007.

[12] Advanced Educational Psychology S K Mangal Prentice Hall India 2014

[13] A Textbook of Educational Psychology Hans Raj Bhatia Macmillan Publishers India Limited, 1977

[14] Passion, Fusion, Tension: New Education and Educational Sciences by Rita Hofstetter (Editor), Bernard Schneuwly (Editor) ISBN-13: 978-3039109838
ISBN-10: 3039109839

exigencies and local considerations but these must eventually be subordinated to long-term considerations. The principles of Anthropological Pedagogy, we believe, would be based on similar principles.

Anthropological Pedagogy also goes far ahead of Educational Psychology in integrating pedagogy with Anthropological Objectives. Educational Psychology has been variously defined as the science of education (Peel (1956)), as a branch of psychology which deals with teaching and learning (Skinner(1958)) or as a branch of science dealing with learning right through the human lifecycle (Crow and Crow(1973)) and is based on well-accepted psychological principles. Educational psychology also deals with issues such as the individuality and personality of the learner, personality traits and characteristics of a good teacher, duties and responsibilities of a teacher, conflict resolution, teacher motivation, selection of syllabus content, nature, laws and theories of learning, classroom climate, rewards and punishment, group behaviour and group dynamics, guidance and counselling etc. Educational Psychology also employs tried and tested methods such as the method of introspection, naturalistic observation, experimentation, field survey method, case history or psychoanalytic method, clinical method and psycho-physical method, most of which are outside the scope of this paper, despite an overlap.

Educational Anthropology, sometimes referred to as the anthropology of education, is a sub-field of anthropology and is based on work carried out by Margaret Mead and later, George Spindler, Solon Kimball, and Dell Hymes. It gained popularity during the 1970s, particularly due to work by professors at Teachers College, Columbia University. The primary focus of educational anthropology is cultural aspects of education straddling the worlds of both informal and formal education, including aspects such Cultural or learning transmission or enculturation and acculturation. Of course, Anthropological Pedagogy purports to be much wider in scope than Educational Anthropology itself, and deals with a study of appropriate learning and teaching practices, including course content designed for long-term human welfare, progress and survival.

Anthropological Pedagogy must also be differentiated and distanced from the relatively less-known field of Pedagogical Anthropology. The latter was commented upon extensively by Maria Montessori and others, and involves among other things, the study of man from a naturalistic point of view without regard to topics such as the origins of man, the theories of monism or polygenism, or migration or classification according to race. On the other hand, it does concern itself with body measurement, anthropometry, craniometry, osteology and the like. [15]

Even though this may sound like a trifle or a bagatelle, the need for a field such as Anthropological Pedagogy resonates louder than ever before. Religious fanaticism is on the rise in different parts of the world, often aided by a literalist interpretation of texts, and cases of religious violence have been rising year on year since 2001. Persecution against religious minorities in some form was witnessed in over 120 countries in 2016. Many religious communities are being routinely and systematically persecuted against, a case in point being the Rohingya of Myanmar. The unspeakable depravity of organizations such as the ISIS has left the world shocked, and its ability to recruit people among the relatively better educated sections of society must call for introspection. According to the website 'The Religion of Peace', Islamic terrorists have carried out 33409 terror attacks between 11.09.2001 and 04.07.2018. It claims that 151 terror attacks were carried out in June 2018 alone, killing 976 people and injuring 835. The world remains vulnerable to acts of religious extremism, and education and learning have done little to stem the rot.

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[15] Pedagogical Anthropology by Mario Monstessori The Maple Press Store 1913

Just as science has barely been able shake off the yoke of Eurocentrism, insular interpretations have been the norm elsewhere in the world rendering the globalization of science a cruel parody. In 2018, the Chief Minister of the Indian state of Tripura Mr Biplab Dev's assertion that the Internet was in use in India over 2000 years ago raised many eyebrows and a lot of ire. Much more paradoxically, India's minster for higher education Satyapal Singh condemned Charles Darwin's theory of Evolution at a time when each and every piece of fossil evidence is being discussed threadbare. According to another widely circulated report, Turkey had decided to stop teaching evolution to school children in 2017, to make way for Islamic learning. This only goes to prove that while scientific discoveries are being made with unfailing regularity, a system to disseminate this knowledge in a manner that will eventually make obscurantism redundant is the crying need of the hour. To date, we have failed very badly here.

In India, as elsewhere, politicians retain a penchant for dragging education systems in wholly undesirable directions, in keeping with their narrow and unscientific worldviews. Yoga and Ayurveda are over-emphasized to a fault, but scientific method is ignored. We may proceed to ask who the unfortunate victims of such tendencies could be: it is undoubtedly the students and society whose very interests politicians and planners seek to protect bear the whole brunt of such ill-conceived and poorly-structured systems.

The role of people and individuals in the change process must also be emphasized. Max Stirner in his work 'The false principle of our education' (1842) rightly remarked "It is very important to bear in mind that a society cannot become new, as long as those who constitute and constitute it remain the old ones." His observations remain pertinent to this day. [16]

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[16] Max Stirner The False Principle of Our Education or, Humanism and Realism, 1842

III.   PRINCIPLES OF ANTHROPOLOGICAL PEDAGOGY

The following are the key principles of Anthropological Pedagogy that we propose, to remedy the situation. These are not mutually exclusive because more than one principle can be applied in a given context. Ideally, all or as many of the principles described below will need to be applied and done justice to in any context, and to the extent practicable, though the emphasis, thrust and weightage given to each principle can always be altered from situation to situation for optimal efficacy of learning, and this would be contingent on local cultural and other considerations but without sacrificing long-term and global objectives.

1. *Maximum Relevant learning principle*

According to this principle, relevant practical learning is emphasized keeping in mind the individual's or the society's well-being. This is also combined with other principles enshrined in this paper under the broad aegis of Anthropological Pedagogy such as the societal benefit principle, Long-term societal benefit principle, and International long-term societal benefit principle amongst others. It is also inexorably tied to the Change in mind orientation principle, Altered social behaviour principle and the Change in Mindspace principle, as enhancement of the quantum or the proportion of the relevant learning along with its proper implementation and its further downstream application can greatly enhance individual behaviour and perception, and in turn modify a society's attributes to great productive effect. This may also be categorized as a two-way approach or a reinforced loop mechanism as metrics and heuristics from a measurement of changes in individuals and societies may be used to draft, tweak and hone suitable changes in curricula. However, a useful starting point of the Maximum relevant learning principle may be to identify what elements of learning are relevant to or enhance real-world experience. This is not to say that the rest of the curricula must be discounted, jettisoned or relegated to the background. They must however, be justified for inclusion on some other sound pedagogical basis, and this principle must be taken together with all other principles in this paper. Per this principle, novel topics such as parenting, career planning or financial planning must be introduced in the syllabus. The term 'relevance in education' has already been debated and defined by many scholars. The term relevance refers to learning experiences that are directly applicable to the aspirations, interests, or cultural experiences of students (This is defined as personal relevance) or real-world issues and problems. (This is defined as life relevance). Issues such as practical learning, experimentation, fieldtrips, interaction with learned men, lateral thinking techniques have all been analyzed threadbare, but our approach focuses primarily on content fixation, interrelationships, ordering and sequencing as well as corroboration with the human development lifecycle, without in any way interfering with or undermining the principles of other fields of pedagogy.

2. *Maximum individual psychological impact principle*

Per this principle, education must create the maximum possible psychological impact in students, and must provide a bulwark against existing widely-held paradigms, wherever possible. Psychology in this connection, refers to the study of consciousness, the mind, mental makeup, thought processes and human behaviour. According to Desiderato, Howieson and Jackson, "Psychology can be broadly defined as the investigation of human and animal behaviour and of the mental and psychological processes associated with such behaviour." Edward Bradford Titchener defined psychology as the science of consciousness, while Walter Bowers Pillsbury and J B Watson defined it as the science of behaviour. N.L Munn and others have opined that psychology demonstrates all the characteristics of a science. As opined by us, changes in human attitude can be scientifically effected through 'Eureka points' or 'Mini Eureka points' and we had discussed these in a previous paper. A Eureka is a well-known interjection used to celebrate a discovery or an invention, and is attributed to the Greek Philosopher Archimedes who reportedly proclaimed 'Eureka' after discovering the law of displacement when he was taking a bath. This is tied to the principle of Mind-orientation and change in Mind-

orientation which is a complex process typically induced by cognitive dissonance. But cognitive dissonance can be wrought through suitably crafted pedagogical techniques aka Anthropological Pedagogical techniques, the teaching of Anthropological Historiography or even Anthropology itself, which can also bring about permanent positive changes to culture and society. Eureka points and Mini Eureka points may initially cause mental upheaval and trauma, but may bring long-term benefits to society. Thus all aspects of learning do not induce Eureka points, or not equally. For example, a detailed study of an obscure plant such as the Venus flytrap, information about which can be obtained on the internet, may not cause a Eureka point at all, and certainly not in the way a class on electricity or magnetism would do, and even this would pale into insignificance when compared to convincing, well-conceived and conceptualized lessons on the theory of evolution and the vastness of the universe. The latter will undoubtedly have a great psychological impact, and trigger further downstream increases in innovation and creativity.[17] Various definitions of creativity have been proposed by Stagner and Karowski (1973), Bartlett (1958), Stein (1974) and others, but from an Anthropological Pedagogical perspective, the emphasis is a hunt for a nexus between societal characteristics and creativity, along with a pro-active approach. Creative thinkers are believed to be self-starters and risk-takers, with their inborn traits usually honed to perfection through training, and an inhibition of these characteristics occurred in societies such as the former Soviet Union which were not conducive to individual creativity. (Simonton, 2000) This idea of Psychological Impact may have universal validity and relevance, but is crucial in cultures with less than ideal attributes, and where remediation is warranted.

Both course content and teaching styles will need to leave the necessary impact on students without being overly dramatic. Contents will need to be presented at a fairly great level of detail, along with a discussion of evidence and rival theories. For example, Croce and Milankovitch's study of the causes of the Ice Age can be included along with a description of the Gauss Matuyama magnetic reversal event and the Bruhn Matuyama magnetic reversal event. Data on evolution of human technology may be thrown in, along with fossil finds. This may include a brief discussion of artefacts found in Olduvai Gorge, Koobi Fora, Lake Turkana, and elsewhere besides discussion of fossils such as the Nariokotome boy, the Lucy fossil, besides discoveries at Sangiran, Trinil, Mojokerto, Hathnora, Narmada Valley, Sri Lanka etc. Details of the KT extinction event, the Cambrian–Ordovician extinction event, accompanied by a detailed discussion of terminologies pertaining to eras and periods such as the Palaeozoic era and the the Cambrian, Ordovician, Silurian, Devonian, Carboniferous, and Permian periods, a discussion of the Pangaea and the Panthalassa among other topics, may also be thrown in.

3. Alignment with learning capacity principle

Per this principle, the syllabus must be aligned with the biological learning capacity and maturity of individuals. The changes that take place in an individual since birth may be divided into two types quantitative and qualitative. Quantitative changes are those changes that relate to dimensions such as height, weight etc and may be referred to as growth. Qualitative changes are those changes which deal with increase in cognitive ability etc. The latter is referred to as development and is much more comprehensive than growth. The human lifespan has been divided into infancy (Birth to two years), pre-childhood (3 years to 7 years), later childhood (7 years to 12 years), adolescence (13 years to 19 years), adulthood (20 years to 60 years) and old age. Most

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[17] The relevance of Culture and Personality Studies, National Character Studies, Cultural Determinism and Cultural Diffusion in Twenty-first Century Anthropology: An assessment of their compatibility with Symbiotic models of Socio-cultural change ELK Asia Pacific Journal of Social Science Volume 4, Issue 2, 2018 Sujay Rao Mandavilli

psychologists believe that learning occurs throughout the lifespan of the individual, but learning may be more effective in the earlier stages of life.

Charles Darwin, the man who developed the Theory of Evolution, was among the earliest scientists to study the developmental process of human beings, when in 1877, he published notes on his son's cognitive and emotional development. Different theories have subsequently been developed to explain different stages in learning. According to the mechanistic model of development proposed by Locke, people are merely machines that react to environmental input. According to the organismic model of development, people were active, growing organisms that set their own development in motion. (Pepper, 1942)

Leading theories have included Eric Erickson's theories of Psycho-social development (proposes Eight stages from infancy to death in which each stage builds on the successful completion of earlier stages- This is known as the lifespan perspective), Lawrence Kohlberg's Theory of Moral Development (Which include six stages grouped into pre-conventional, conventional and post-conventional levels), Sigmund Freud's theory of psychoanalytical development which views development as being shaped by unconscious forces that motivate human behaviour, Jean Piaget's Theory of Cognitive Development which proposed four stages of cognitive development i.e. the sensorimotor, preoperational, concrete operational and formal operational stage and Lev Vygotsky's sociocultural theory of human learning which views learning as a social process and the origin of human intelligence in society or culture. Most of these theories tend to divide the human lifespan into various stages and define the learning attributes for each.

Behaviourists, such as John B. Watson, Ivan Pavlov and B.F. Skinner, believed that learning occurs mainly through processes of association and reinforcement, and focused on the mechanics of learning. According to the Social Learning theory or Social Cognitive theory developed by Albert Bandura, the impetus for learning emanates chiefly from the individual through modeling or observational learning. The information processing approach is a framework which explains cognitive development by analyzing the processes involved in perceiving and handling information. The Cognitive Neuroscience Approach argues that accurate understanding of cognitive and emotional functioning must be related to what happens in the brain. This process explains how cognitive growth occurs as the brain interacts with the environment. (Gazzaniga, 2000; Humphreys, 2000; Posner & DiGirolamo, 2000). Another perspective to cognitive development is the Contextual perspective. According to Urie Bronfenbrenner's Bioecological theory, a range of interacting influences impact a developing person, and ecological influences either promote or stifle a person's growth. This theory posits that development occurs through a complex process of interaction between a person and his environment. [18]

There have been other theories too; Konrad Lorenz (Lorenz, 1957), an Austrian Zoologist, in a study of ducklings, proposed the idea of critical periods, where events could leave a lifelong impression. Paul B. Baltes and his colleagues proposed a life-span developmental approach- development was lifelong, but the relative influences of biology and culture shifted. Per his model, development was greatly impacted by cultural and historical contexts.

Studies have also endorsed the importance of timing in language acquisition. According to Eric Lenneberg (Lenneberg, 1969), there is a critical period for language acquisition beginning in early infancy and ending around puberty. Language acquisition after this point would be relatively difficult. This hypothesis has been

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[18] Human Development Ninth Edition Diane E. Papalia, Sally Wendkos Olds, Ruth Duskin Feldman, McGraw Hill Education (India) Pvt Limited, 2004

reinforced by many cases studies around the world, often conducted in a wide variety of situations, yet most planners fail to take this into account.

4. Maximum individual benefit for life or career principle

Per this principle, the maximum benefit accrued to the individual either over his useful working career or his life must be considered as the ultimate yardstick to induce policy changes or tweaks to the education system. This is based on the principle that the enhanced welfare or well-being of individuals will cascade meaningful changes to society as a whole, and even trigger innovation and creativity to boot. Per this principle, topics such as Personality development, Physical and Mental health, Career planning, motivation, self-control, self-awareness, empathy, communication skills, parenting and financial planning must also be taught in addition to traditional learning. Many speakers have opined that traditional learning has its limitations, but many life skills are being increasingly built into the curriculum.

According to a United Nations Inter-agency meeting from 1998, "Life skills education is designed to facilitate the practice and reinforcement of psychosocial skills in a culturally and developmentally appropriate way; it contributes to the promotion of personal and social development, the prevention of health and social problems, and the protection of human rights." Thus, this definition emphasizes the inculcation of the right kind of skills in the appropriate cultural setting with a view to maximizing social well-being.

Promoting the right kind of life-skills would also go a long way in enhancing personal success, creativity, cultural adaptivity, socioeconomic adjustment, gender equality, democratic values, better parenting, lifelong learning, better citizenship and communal and international peace and harmony.

5. Rational individual principle

Per this principle, the objective of Anthropological Pedagogy would be to create rational and well-thinking individuals for society. This must be achieved in the true letter and spirit of this term. Products of the educational system must not merely toe the established or the conventional line, but must seek to think creatively and in line with the needs to changing and evolving societies. They must not just be technology-savvy or creative at the workplace, but for example, be in a position to challenge well-established paradigms across multiple domains, both technical and cultural, and propose creative and practicable solutions for issues as contentious and diverse as global warming and the role of religion in a globalizing society, or at the very least, be in a position to think contextually. Various definitions have been provided of thinking- "Thinking is a mental activity in its cognitive aspect of mental activity with regard to psychological objects." (Ross (1951) "Thinking is an implicit problem-solving behaviour." (Mohsin (1967)), (Several theories of learning have also been proposed such as the Behaviouristic Learning theory, the Gestalt and holistic theory, Piaget's developmental theory, Sullivan's basic modes theory, Bruner's theory of cognitive development, the information processing theory, Freud's psychoanalytic theory of thinking and more) but from an Anthropological Pedagogical perspective, the emphasis is on the production of individuals who use their thinking skills for the long-term well-being of society. Our approach also seeks to inculcate contextual, practical, associative and critical thinking skills over merely perceptual or abstract thinking. Critical thinking in this case emphasises, creativity, imagination, discovery and reflection. In addition, we believe contextual thinking skills, particularly cultural and geographical specific thinking skills are not merely important: they have the potential to alter the social sciences fundamentally and bring about a revolution of sorts. We had referred to this as the 'Globalisation of Science', a movement that is inseparably interwoven with the tenets of our approach. Thus, our approach is antithetical to the 'follow the big man' approach.

6. Maximum societal benefit principle (Practical needs approach. Local needs approach or societal metrics approach)

As per this approach, the educational system must serve the needs of the society optimally. This can be achieved not on the basis of trial and error, but by due cogitation and by carefully collecting metrics and analyzing them to bring about suitable changes in the educational system. This may also be known as the Practical needs approach because it states that the education system must be geared to save the practical needs of society. It is known as the local needs approach because it is primarily designed to serve the needs of society. It may also be known as the societal metrics approach because, metrics gathered are in turn used to induce meaningful changes in the education system. [19]

7. Maximum long-term societal benefit principle

This approach focuses on societal benefit, but from a purely long-term approach. Thus, long-term issues take precedence over short-term considerations, and the thrust is a long-term amelioration of society with short-term interests made subservient to long-term interests. In other cases, the two must be carefully balanced out against one another, and exceptions made in certain specific cases. This will be suitably reflected in pedagogical content and long-term issues that plague society may be highlighted or sought to be addressed.

8. Maximum international long-term societal benefit principle (Neo-centrist approach)

This approach combines a long-term societal orientation with an international, global approach (aeternitism and omnimodism) and would be akin to our postulates comprising the philosophy of Neo-centrism. In other words, the education system would be designed, wherever possible, to promote a healthy long-term view and orientation among students along with a global and an integrated outlook. For example, students may be taught the benefits of living in harmony with nature, and the dangers of unsustainable development may be stressed. Thus, many aspects of the curriculum may be an upshot to this approach, and consequently any aspects of learning that run contrary to this philosophy must be qualified and not be glorified.

9. Antidote to popular ideologies principle

Per this principle, the education system must provide an antidote to popular or prevailing ideologies, and this can often be done by providing students with an alternative view or a more global outlook. Thus, this approach must begin with an analysis of ideologies which also include religions and cultures which will provide the fulcrum, the direction and remediation for remediation efforts.[20] This principle may spawn a series of micro and macro approaches which may include the creation of new fields and sub-fields of study such as Anthropological Historiography and Anthropological Pedagogy. [21]

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[19] Social Psychology Eighth Edition Elliot Aronson, Timothy D. Wilson, Robin M. Akert Pearson 2014

[20] Articulating comprehensive frameworks on socio-cultural change: Perceptions of social and cultural change in contemporary Twenty-first century Anthropology from a 'Neo-centrist' perspective Published in ELK Asia Pacific Journal of Social Sciences Volume 3, Number 4 (July 2017 – September 2017) Sujay Rao Mandavilli

[21] Introducing Anthropological Historiography as an integral component of Twenty-first Century Historiography: The role played by Anthropological Historiography in the attainment of long-term Anthropological goals and objectives International Journal of Innovative Science and Research Technology, February 2018, Volume 3, Issue 2 Sujay Rao Mandavilli

10. Science and Pseudo science principle

The student must also be equipped with the ability to distinguish between science and pseudoscience, and a demarcation between the two was made as early as 1844. The latter includes statements that seek to masquerade as scientific claims, but are usually exaggerated and unverifiable, and sometimes made with the intent to deceive. Many are presented, and have currency only due to the inability of the common man in the street to demarcate between the two. While no one would deny the fact that human biases and prejudices, and the errors and lapses arising the refrom may in large part be natural and cannot be entirely wished away with a magic wand, any healthy approach must seek to minimize and eventually work towards the reduction or elimination of pseudo-scientific approaches This can only be done through a judicious combination of cultural remediation and the right syllabus content: The principles of Scientific method must be taught from a young age, and must be progressively built upon. Sadly, this is not the case today: memorization at an unwarranted level of depth rules the roost instead. Consequently, scientific literacy is at best limited even though students are loaded with information.

11. Change in individual mind-orientation principle

We had proposed that the theory of mind-orientation, was one way of assessing social and cultural maturity of society. Mind-orientation refers not only to the thoughts, beliefs and values that constitute a person's mental makeup, but also how he acts upon them to orient his attitudes in life. These may greatly impact his actions, and his direction and purpose in life. Mind-orientation may be shaped largely by (a) parenting and upbringing (b) peer-pressure (c) education and schooling (d) The effects of the multi-media (e) societal constraints and restrictions including a multitude of factors such as language, religion, cults and ideologies (f) Socio-economic status. Factors such as parenting and upbringing, peer-pressure, education and schooling etc, are also determined by the values and attributes of religious, linguistic and cultural or social groups which will in turn impact parenting, peer-pressure and other factors impacting mind-orientation. However, the extent to which religious groups, social or cultural groups and linguistic groups exert influence varies from context to context. In some cases, the effect of a religious group, social group, cultural group, or linguistic group may be very low, marginal or even non-existent. In some other cases, their influences may be relatively high. The quantification of the impact of such groups on an individual's mind-orientation may be attempted from scenario to scenario. In many cases, other groups also exert powerful influences, examples being the values of an external or third-party culture. Analyze the American influences on Indians living in the USA for instance. Other secondary groups can also affect an individual's mind-orientation. The mind-orientation of different groups is also determined by the global socio-cultural landscape, and this is determined by the process of cultural symbiosis as described by us in an earlier paper.

Thus, mind orientation is tightly interwoven with culture and society, and even in this age of globalization, an individual's mind-orientation is deeply impacted by a given society's values, preferences and constraints. Thus, the collective and general mind-orientation of individuals changes rather slowly, and cannot change beyond a point. We refer to this as general mind-orientation in society. As a result of this, an individual tends to acquire and retain thoughts that fit in with his mind-orientation, and tends to sub-consciously ignore those thoughts that do not fit in with his mind-orientation. Thus, an individual's mind-orientation impacts many aspects of his life, such as his ability to acquire and retain language, his innovation, his creativity etc. This also explains the attitudes and behaviour of individuals in a society.

The following were the basic Mind-orientation types that we proposed. Each Mind-orientation type may be further subdivided into several types, though the latter is mostly left open-ended at this stage for further interpretation and elaboration.

- Family orientation: In this case, the individual's efforts are primarily geared towards the satisfaction of familial needs. This is perhaps the most common type of mind-orientation amongst a vast majority of people in different parts of the world, and particularly in traditional and conservative societies including India. Individuals with familial orientation may be adept or expert in making a living through various means, but these efforts are usually geared at satisfying the needs of the family, and are not a goal or an end by themselves. Such individuals may be punctilious and meticulous, paying great attention to detail and execution. Such individuals may also be often empathetic to the needs of others, often putting their own needs next or even last. Family orientation is very common among women, but not too uncommon among men, either. A Family mind-orientation has several tangible benefits which include the preservation and transmission of culture.

- Employment or Business orientation: In this case, the individual's efforts are primarily geared towards employment of business. I.e. satisfaction of livelihood needs, and all other efforts are subservient to these. Such orientations are common in many parts of the world, including developing and developed ones, and equate to a situation where livelihood is a passion or calling in life. Employment or Business orientation is very common among men, but not too uncommon among women, either. Employment orientation may be distinct from Business orientation, and the modal personal traits or attributes may vary in each case. The former may be marked by humility and attention to detail, while the later may be marked by brazenness and acceptance of risk. An employment or business orientation has several economic benefits for society, and will lead to a greater well-being for society as a whole. However, this may be suitably sub-categorized for a more granular analysis. For example, accountants may possess different modal attributes from doctors and this may be reinforced through parenting. This is why doctors' children may be more successful as doctors and not engineers. In some cases, changes may be introduced through rebelliousness and recalcitrance, and we have discussed this in another part of this paper.

- Individual mind-orientation: In this case, the individual sends to be self-centric in his pursuits. This type of orientation is characterized by a great emphasis or satisfaction of individual goals and aspirations. He may also attach a great deal of importance to his own personality or image makeup. There may be several variations of the basic theme, and each will be characterized by different personal traits or attributes. A variant for example may be the hedonistic personality type where are other endeavours are sacrificed to the pursuit of undiluted pleasure. Another variant is the Politician and the Manipulator, and this type of person typically seeks unnatural control over others, often going to great length to strategize and legitimize deviant behaviour. Yet another type may be the basic introvert who may be characterized by a general disinterest in the affairs of others around him.

- Societal Orientation: This type of Mind-orientation tends to put the well-being and needs of society above individual and all other needs. This type of mind-orientation is relatively rare in most societies, in spite of the fact that has some tangible benefits to offer to society.

- Religious, spiritual or philosophical orientation: In this case, a great deal of importance is placed on religious, spiritual or philosophical needs often at the expense of all other needs. It may also be recommended to distinguish religiousness from spiritualism or a philosophical bent of mind for further analysis as there may be subtle differences between all the three. Religious, spiritual and philosophical orientation beyond a certain degree of measure may be counter-productive and lower the well-being of society.

- Intellectual or creative orientation: In this type, a great deal of importance is placed on intellectual needs and creativity. A variant of this may be an Artistic Mind-orientation. A few may however, wish to treat the two

as separate categories. This type of mind-orientation is relatively less common particularly in traditional or conservative societies, and may be the exception rather than the norm in most advanced societies. The exact opposite of this kind of orientation is regimentation and adherence to bureaucracy or a procedural orientation, and this will stifle creativity and imagination in the ordinary course of events.

- Militant-orientation: In this type of orientation, individuals are geared to fight and protect society from external threats and forces. This type of mind-orientation may be present to some degree in advanced societies, but may be more common in tribal and feudal societies.

- The Anarchist or the queer man: This type of mind-orientation may not be a bona fide category per se but a residual type and may be characterized by a partial or complete disorientation on some or many fronts. Many would not accept this as a mind-orientation and may be a resultant of unique personal experiences or a worldview shaped by cognitive dissonance.

- Other types of Basic mind-orientation: Other types of basic mind-orientation may also be defined with a proper justification, but most may be subservient to and slotted into the above categories.

To what extent an education system can bring about a change in the mind-orientation of individuals is debatable, but undesirable or irrelevant mind-orientations may be weeded out. Students may also be made aware of other types of mind-orientation such that they can make their own informed choices.

12. Altered social behaviour principle

In its broadest sense, social behaviour may be defined as the behaviour between two or more organisms, usually of the same species. Social behaviour is studied by Social Psychologists. Social psychology may be defined as a scientific study of how people's thoughts, feelings, and behaviour are influenced by the actual, imagined, or implied presence of others. The altered social behaviour principle from our perspective is related to the idea of mindspace but pertains to an assessment of individual social behaviour and making individual social behaviour compatible to the needs of society and stamping out all kinds of undesirable or unacceptable social behaviour to the extent that such an approach is in keeping with cultural norms. This may comprise of factors such as Perception in relation to the environment (Silverman, 1979), Affiliation (association with a larger organization) or the lack of it, which is seen as a very important element of success or failure (Schachter 1959) (Baumeister & Twenge, 2003), Conformity (compliance to regulations, standards, rules or laws and Normative social influence) versus non-conformity as determined by individual traits or group dynamics (System of behaviors and psychological processes occurring within a social group or between social groups) (Asch, 1951) (Sherif, 1937), Compliance to social norms or rebelliousness (Cialdini, 2006) (Dollard et al., 1939) and Emotional Quotient (Emotional quotient measures a person's Emotional Intelligence, and an increase represents increased empathy and changes of success). (Goleman, 1995) (Mayer and Salovey, 1995) [22] The term emotion is derived from the Latin word emovere which means to stir up and may be defined as "an affective experience than accompanies generalized inner adjustment and mental and psychological stirred-up states in the individual and that shows itself in his overt behaviour." (Crow and Crow, 1973) Other concepts have included Social Cognition, which defines how people think about themselves and the world and large, and this includes how they select, interpret, remember and use social information i.e. information about people and social situations. (Fiske and Taylor, 1991).

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[22] Emotional Quotient: Why it can matter more than IQ: Daniel Goleman, New York Bantam books, 1995

13. Change in cultural or societal orientation principle

We had also introduced the concept of Cultural orientations, a concept that we believed was distinct from the concept of Mind-orientations described earlier, and we had proposed the Seven Cultural Orientations as described below [23] [24]:

- *Past-orientation versus future-orientation*

Past-orientation and Future-orientation may be defined as the relative emphasis placed by a society or culture on its past and future. Future-orientation is associated with attributes such as planning, foresight, personality development directly and with other attributes such as individualism and achievement indirectly. An over-emphasis on the past may lead to a vindication or exoneration of the cultural baggage of the past and may impede cultural progress, both material and non-material. Per the Vertical-horizontal model described in our papers, globalization leads to the multiplication of horizontal factors, thereby weakening vertical factors. We must also keep in mind the fact that Western societies have also been typically future-oriented since close to half a millennium. Thus, globalization and modernization gradually make more conservative societies future-oriented as well.

- *Inward-looking cultures versus outward cultures*

Some cultures are undoubtedly more outward-looking than others, and many have traditionally or conventionally been so. This orientation may also be referred to as the internal or external orientation of society. The presence or absence of Cultural Elitism, key political and cultural institutions as well as the level of physical, educational and social infrastructure and the general intellectualism play a role in determining the Internal or external orientation of society. Remediation may be brought about by means of suitable changes in the education system through suitably-designed pedagogical techniques or an improvement in social or physical infrastructure. A change in a society's orientation will increase its cultural receptivity and bring in attendant benefits.

A Xenophobic culture is one that harbors a deep-rooted suspicion or aversion towards other cultures as a well-established cultural trait. In some situations, Xenophobia may manifest itself in other forms such as condescension towards other cultures or a desire to maintain cultural or racial purity. Xenophobia may arise due to several reasons, one of them being ethnocentrism, though there may be other causes such as autarchy (autarky), cultural isolation or ignorance. This is strongly co-related with inward orientation, and often with past-centrism. At the other end of the spectrum, xenocentrism may be observed, though this may not necessarily be accompanied with positive consequences, and a culture may swing like a pendulum from one extreme to another. This may also be triggered by a popular disenfranchisement or disenchantment with a situation generating a yoyo effect before normalization or stabilization takes place (Yoyo theory of Socio-cultural change). Examples of Xenophobia have included the Islamophobia of the recent decades and Anti-Semitism of Nazi Germany. Xenophobia has also been attributed to mid-twentieth century Japanese culture by some analysts and the Hindutva movement of India.

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[23] Articulating comprehensive frameworks on socio-cultural change: Perceptions of social and cultural change in contemporary Twenty-first century Anthropology from a 'Neo-centrist' perspective Published in ELK Asia Pacific Journal of Social Sciences Volume 3, Number 4 (July 2017 – September 2017) Sujay Rao Mandavilli

[24] The relevance of Culture and Personality Studies, National Character Studies, Cultural Determinism and Cultural Diffusion in Twenty-first Century Anthropology: As assessment of their compatibility with Symbiotic models of Socio-cultural change ELK Asia Pacific Journal of Social Science Volume 4, Issue 2, 2018 Sujay Rao Mandavilli

- *Rigid versus flexible cultures*

Cultures may also be classified into rigid and flexible cultures. Flexible cultures are often those with less cultural and intellectual baggage, and which are amenable to change. Cultures which are flexible in some respects, may be rigid in some others and it may be necessary to perform an analysis at the level of a cultural element. An example to illustrate this point may be the Republican Party's penchant for laissez-faire economics and neo-liberalism and right-of-centre policies in the USA.

- *Individualistic versus collective cultures*

Some cultures like the USA may be more individualist, while some others like the erstwhile and the now-defunct USSR emphasized collectivism of thought and statism. Most others can be placed in a continuum between these two extremes, and the merits and demerits of both points of view are still debatable.

- *Material and non-material orientation*

Some cultures like the USA may be more materialistic, while some other developed countries like Japan much less so. Most others can be placed in a continuum between a material orientation and various non-material orientations such as religious or spiritual orientation, and the merits and demerits of different types of orientation are still debatable.

- *Contentment versus innovation*

Some cultures do not wish to effect changes to the status quo, while some others pursue a relentless quest for perfection and changes in the status quo. This metric would indicate a culture's appetite for innovation, and would be commensurate with its innovation indices. This metric may, however be affected by a cultures past or future orientation as well, and in some respects, all the orientations are inter-related.

- *Rational-orientation versus Non Rational-orientation*

In a rational society, less reliance is placed on myths, legends, superstitions etc. It is expected that all non-rational societies will evolve into rational societies in due course, and the Cultural Anthropologist has a core and a crucial role to play here.

Thus, cultural or societal orientation can be suitably modified through the medium of Anthropological pedagogy, though the mechanics must be suitably investigated. Many approaches are indeed possible, such as the introduction of mind-altering examples from alien cultures which the students would not be exposed to in the normal course of events. Less desirable aspects of a culture can also be similarly downplayed through proper education and awareness-creation.

14. Alteration in Mindspace principle

The idea of 'Mindspace' proposed by us in an earlier paper originates from the fact that every individual has limited time at his disposal, or limited bandwidth to focus on multiple issues. He can at best devote his time and attention to a limited number of activities. Thus, if he spends an inordinate amount of time on a particular activity, this automatically reduces the time available for other activities. For example, if an individual spends more time watching television, this automatically reduces the time that he has for reading. Thus, the popularization of television has adversely impacted reading habits. Let us consider another example. The advent of the internet has similarly led to the decline of television or cinema as a mode of entertainment. It has also led to the decline of reading for pleasure, but has boosted access and availability of information. Thus, the internet and the television have led to a general decline in people's reading skills in any given language. However, this may have boosted the demand for basic, functional skills in English and the popularization of many technical words among large sections of the population in India. On the other hand, knowledge of words pertaining to

art, literature and poetry may have actually declined. Similarly the interest or the ability to obtain profound knowledge on any topic through a serious study of original material may have been severely compromised. Thus, the advent of technology may always not be for the betterment of society. It may even induce a shift from productive avocations and pastimes to less productive avocations and pastimes. This may impact a wide variety of domains such as linguistic skills, learning ability and consequently, even self-confidence or attitudes towards life.

- *Learning Mindspace*

A logical derivate of the concept of Mindspace is the concept of Learning Mindspace. It states that different concepts and ideas vie for attention in the learner's mind and that an overall, balanced assessment of the effects of different syllabus content must be made for maximum efficacy, keeping in mind all the other principles of Anthropological Pedagogy espoused in this paper. This may often involve some amount of trade-off, but the adequate and appropriate use of metrics may further the case.

- *Bounded Mindspace and Non-bounded Mindspace*

We may also introduce the concept of Bounded Mindspace and Non-bounded Mindspace. This involves the compartmentalization of Mindspace into well-defined compartments through careful long-term research and observation. It is early days yet, but further research should endorse the observations of our paper. In other words, students may have a well-defined Mindspace (which may translate into time allocation) for say sports, and they are unlikely to swap it for language learning or spiritual pursuits. This may not apply for all activities. People may be willing, on the other hand, to swap indoors activities for outdoors activities, and to alter their linguistic mindspace to make space for the learning of new languages. This is something that the Anthropological Pedagogist needs to keep in mind. Between the two extremes lies the concept of semi-bounded Mindspace, whose boundaries are fuzzy and nebulous and can be altered through careful strategizing for beneficial effect. One clever trick may be to introduce a topic such that it reduces the time at hand for other less beneficial pursuits. These approaches, if properly applied and conceptualized, can lead to judicious changes in the sociocultrual ecosystem, but modal observations must be used as the yardstick for planning. Understanding this concept is extremely important. For example, teaching Organic Chemistry may not impact students' belief in religion, while Anthropological Historiography may. This is something that may need to be studied at a great level of detail over the next couple of decades.

15. Neutralization of perspective principle

Per this principle, the objective of the education system will be to neutralize students' cultural beliefs as far as possible or practicable, in order to bring them closer to global perspectives such that this can be used as a platform to promote global cultural harmony. This principle is somewhat similar to the 'Antidote to popular ideologies principle' but must be adopted across systems synchronously for maximum efficacy. We may call to mind our symbiotic approach to socio-cultural change here, and cultural homogenization, even though this approach has its own limits. Neutralization of perspective may be accomplished by many different approaches such as presenting as many perspectives to students as possible, or by simply designing syllabus in such a way that it enables students to broaden their horizons. This would call for the presentation of alternative perspectives to students other than the one that holds sway in that culture. Wherever issues are unresolved a range of perspectives may be presented to students.

16. The Principle of Non-dogma

Per this principle, dogmatic constructs and beliefs must be totally eschewed and overcome over a period in time using education as a vehicular platform to promote scientific temper and rational thinking. Dogma in this connection may be defined as a principle or tenet laid down by authority to be incontrovertibly true. Dogmatic assertions cannot be typically revised or corroborated by real-world experience or subsequent findings. Dogmatic assertions may be likened to pseudoscience which comprises of grandiose and unfalsifiable claims, and is characterized by confirmation bias, and not systematic attempts to refute such claims. Contrary to popular perception, dogma is typically all-pervasive and dogmatic beliefs are common among the scientific community too. Encyclopaedias of pseudo-science have been attempted, but if pseudo-science is to be fought, critical thinking skills and out of the box thinking skills may need to be inculcated. [25]

The Pedagogist may also want to contribute to a critique of all pseudo-scientific and pseudo-historical constructs in the interests of rationality (E.g. belief in Pushpaka Vimanas or Ancient Indian flying vehicles, works by Erich von Daniken all of which do not fall under the purview of mainstream science). This should be done with a fair amount of rigor, and the reasons why they are unscientific clearly explained to students, instead of merely brushing them aside as being irrelevant or unimportant to the course of future events. [26]

17. Sociology of science principle

We had proposed the term 'The Sociology of Science' in another paper. This, inter alia, refers to the role played by well-conceived scientific teaching methods in orchestrating social upliftment and disseminating scientific knowledge. The 'Globalization of Science' would be another vehicular platform which would enable this to happen by spreading the benefits and fruits of science far and wide. Introducing science and scientific knowledge in an appropriate fashion among the deprived and the under-privileged, and using it to sideline beliefs that are less anchored in science would lie at the heart of this approach. [27]

18. Overarching knowledge principle

Per the postulates of this principle, overarching knowledge and concepts would take precedence over minute details, much of which can be easily referred to or obtained by the enterprising and ambitious student from the internet or social mdeia. It is the concepts and underlying, overarching concepts that count more so in this epoch of the internet and seamlessly-flowing information, and this if judiciously applied will lead to an exponential growth in knowledge given the concept of 'learning mindspace'. This will call for restructuring the syllabus and course content, but this may be a task easier said than done. A concept here may be defined as a brief but clearly stated idea around which the rest of the course content may be organized. Concepts again, must

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[25] Pseudoscience: The Conspiracy Against Science edited by Allison B. Kaufman, James C. Kaufman, 2018 Massachusetts Institute of Technology

[26] The Pseudoscience Wars: Immanuel Velikovsky and the Birth of the Modern Fringe By Michael D. Gordin

[27] Introducing Anthropological Historiography as an integral component of Twenty-first Century Historiography: The role played by Anthropological Historiography in the attainment of long-term Anthropological goals and objectives International Journal of Innovative Science and Research Technology, February 2018, Volume 3, Issue 2
Sujay Rao Mandavilli

be presented in such a way that the creation of 'Eureka points' and mini Eureka points' in the minds of students is encouraged.

19. Internal consistency principle

The Internal consistency principle is another core principle of our paper, and the consistency of a set of ideas is that they do not contain any logical contradictions. It states that the educational framework and content must be devoid of major and minor internal consistencies within and across subjects, and that the course content must present a seamless and cogent perspective to the learner. This must be achieved as far as is practicable or possible, given the breadth of unresolved topics in various fields, and the lack of interdisciplinary studies in many fields. To put it differently, the content must be presented in such a way that students will be able to synthesize and correlate information across a wide variety of fields easily.

20. Cultural needs principle

As per the tenets of this principle, the cultural needs of society are used as the basis for determining pedagogical content. We however believe that this will not be an overriding or an overarching concern in the Twenty-first century which has seen a marked tendency towards cultural integration, but must be treated as a secondary or a sub-servient consideration. To word it differently, all other principles must get the upper hand; however, the interpretation of such principles must not contradict with cultural sensitivities or considerations until societies have genuinely surmounted those considerations from within, whether or not such changes have been induced or wrought by pedagogical methods. In other words, educational content will gradually merge across societies in the twenty-first century, though not completely.

21. Individual needs principle

According to this principle, some room or scope will be available to cater to individual needs without compromising with the overall content or direction of pedagogical initiatives. This has been addressed in a variety of approaches before, variously referred to as a 'special needs approach' or 'remedial education', and its interface with Anthropological pedagogy is minimal at best; it would therefore just suffice to mention it in passing. It would also be necessary to draft separate policies to address the needs of special categories of people.

22. Justification for inclusion principle

Per this principle, each item in the syllabus must be justified for inclusion based on any of the principles enshrined in this paper, or any other principles that may be introduced or brought to bear any time in the future provided they do not contradict with our core principles or are otherwise based on the principles of fair play and justice.

23. Intelligent learner principle

Per this principle, it is assumed that the learner is intelligent enough to make his own judgments, and rocksolid facts must take precedence over unsubstantiated opinions and interpretations in course contents. Wherever interpretations are paramount in subject presentation, as wide an array of interpretations as possible must be presented without any inherent bias or prejudice, while leaving some amount of discretion to the student. This principle must be implemented taking into consideration the mental maturity and the cultural

contexts of the students. This is inexorably related to the other principles of our approach, and will enhance the overall efficacy of our approach.

24. Student friendly course content principle

According to this principle, the course content should be as student friendly as possible. This term is derived from the term user-friendly which has many definitions, examples of which are easy to learn, easy to use, easy to understand, or deal with; other definitions include agreeable or appealing. Of course, there is no easy way of measuring this. However, as a crude rule of thumb, the education system must provide maximum value to students without encumbering them or inconveniencing them.

25. Meaningful Identity formation principle

According to the meaningful identity formation principle education must not only just form a bulwark against obscurantism and fanaticism, it must also take the contextual realities of the identity formation process which may include more complex patterns such as intersectional identities into account to advance more meaningful, productive, and beneficial identities. These must be fulfilling and enriching without interfering with other people's right to live. Needless to say identify formation is a process that begins from a very young age, and this can meaningfully be altered through the education system. [28] [29]

26. Thoughtworlds and worldviews principle

Thought worlds are synonymous with the mental makeup of individuals. Thought worlds vary based on cultures, subcultures, cultural categories, cultural sub-categories, individual elements, and at the level of a cultural sub-group. Thus, there may be variations based on different dimensions such as age, gender and religious affiliation. It is reasonable to expect wide individual variations in most cultures. The assessment of an individual's thought worlds must be carried out comprehensively and must be presented in clear and unambiguous terms. There is an underlying structuralism and functionalism in thought worlds, and a change in a component causes a ripple or a cascading effect. Thus, hierarchies of typical or modal thought worlds in cultures, subcultures and individuals can also be accomplished as was discussed by us in an earlier paper. All the concepts that operate and are applicable to the theories of structuralism and functionalism would be carried forward here as well including core doctrines of subconscious operations. It would also be instructive to understand the role of an invisible hand in maintaining internal or external equilibrium without disturbing harmony. Proactive measures may result in changes, but these changes are usually introduced in such a way that they cause minimal disturbance or disharmony. Changes that usually do not satisfy these principles are usually rejected or produce a level of cognitive dissonance that result more painful changes subject to the constraints of human nature and behaviour.

Thought worlds are also aggregations of attitudes. Attitudes may be referred to as evaluations of people, objects and ideas (Ajzen and Fishbein, 2005) (Petty et al, 2005). Attitudes may either be cognitive based (These are usually rational) or Affective based (Evaluations rooted in emotions and values). Attitudes can be either explicit or easily expressed and implicit or mostly subconscious. (Gawronski & Bodenhausen, 2012) Attitudes,

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[28] Reconstructing identity: A Transdisciplinary Approach Nicholas Monk, Mia Lindgren, Sarah McDonald, Palgrave McMillan 2017

[29] Identity: Sociological Perspectives Steph Lawler, Polity Press, 2008

particularly Affective based attitudes, are subject to different types of conditioning such as Classical Conditioning (Pavlov and Watson) and Operant Conditioning (B F Skinner).

The Anthropological Pedagogist has his task clearly played out. He must induce changes subtly and gently without disturbing the cultural ecosystem. While changes must be introduced proactively, the culture must also be prepared for it, and the downstream implications must be studied, both within the region, and beyond.

Another interesting concept is that of a worldview. A worldview may be defined as a fundamental cognitive orientation of an individual or a group of individuals in a society or a society as a whole encompassing the whole of the in dividual's or society's knowledge and points of view. However, the concept of worldview is largely irrelevant for the purposes of our study, and is only mentioned in passing. This is because of the following reasons:

- Worldviews are merely subsets of thought worlds as they incorporate those elements of thought worlds which possess an external orientation or those that can be defined in relation to the external environment.
- Worldviews are shaped by thought worlds and not the other way around.
- Changes that are effected to thought worlds will result in corresponding changes to worldviews making them as such superfluous and redundant for the purposes of our study.

However, a Cultural Anthropologist may still wish to ascertain worldviews of individuals or groups on various cultural components as a part of a study of thought worlds or mind-orientations, and this is therefore still mentioned in passing.

27. Ideal Choice of language principle

According to this principle, the ideal choice of one or more language will play a major role in enhancing the efficacy of learning. This issue is far from simple, and must be given the attention it deserves. This constitutes and interface between Anthropological Pedagogy and Linguistics, or to be more specific, language dynamics. In polyglot societies like India, where decision making takes place and different levels, students have been torn between the choice of the language of instruction is typically is the mother tongue or the language of the state, a more widely used lingua franca and language of commerce such as English, and to a lesser extent, a declared national language such as Hindi. This is a complex tripartite battle, and one that leaves parents unnerved and confused. A mismatch between the two, often dictated by political whim, has brought may a nation to pedagogical and economic ruin. Stark examples of this have included the relatively successful and prosperous Malaysia, and several Indian states such as West Bengal, Gujarat, Uttar Pradesh and Tamilnadu. In Malaysia, planners preceding the onslaught of liberalization, failed to understand the persistent dominance of English across the globe, or wishfully thought its role would evaporate with the demise of colonialism, and in West Bengal dogma was to blame for the abolition of English in primary schools in 1982.[30] In India, planners have been traditionally more hidebound as a result of their rather limited education, and the education system has been at the mercy of short-sighted and selfish politicians. The results have been there for all to see: the dynamics of language have barely been altered; on the other hand, it is the students who have suffered terribly,

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30 Abolition of English at Primary Level in West Bengal Poromesh Acharya Economic and Political Weekly Vol. 17, No. 4 (Jan. 23, 1982), pp. 124-128

and their educational prospects compromised. Societies are hoisting themselves by their own petard, but have yet to realize it.[31]

This is not to say that learning in the native language offers no tangible benefits. Many studies have shown that learning in the native language offers several important benefits over learning in an alien language in which students can scarcely be expected to be familiar. Thus a judicious assessment may be in order, and the capabilities and socioeconomic status of learners must also be taken into account.

Linguistic Mindspace

The idea of linguistic Mindspace is a subset of the idea of Mindspace. Linguistic Mindspace may be further sub-divided into two sub-components Linguistic Mindspace and Strictly Linguistic Mindspace. The former involves flexibility in time allocation in the learning of languages and the learning of other subjects, while the latter involves flexibility in time allocation only within the learning of different languages or different aspects of the language. This must be borne in mind by planners, and only languages or aspects of a language that have utility in accordance with all the other principles enshrined in this paper must be short-listed for inclusion. This will also ensure that students invest time in learning topics that benefit them.

A second language may be defined as a language that is not the native language of the speaker. Several theories have been proposed to explain the process of second language acquisition; however, none has universal acceptance. The history of research on Second Language Acquisition can be traced to Corder's 1967 essay 'The significance of learner's errors, and Selinker's 1972 article Interlanguage. By the 1980's the theories of Stephen Krashen known as the Input Hypothesis advocating sub-conscious language acquisition, and the division of second-language learning into five periods, had currency. In the 1990's several new theories were introduced, such as Michael Long's Interaction hypothesis proposing face to face interaction, Merrill Swain's Output hypothesis and Richard Schmidt's Noticing Hypothesis.

Success in second language acquisition may also depend on factors such as linguistic complexity, linguistic distance, cultural attributes, zeitgeist, attitudes towards the language in society, indispensability of the language in the eyes of the learner, pedagogical content, structuring of the rest of the syllabus (Mindspace), teacher competence and student interest.

28. Elimination of Vested interests principle

Vested interests in this connection may be defined as the obfuscation of a new paradigm or a construct due to non-scientific considerations, usually arising from a reason to promote one's self-interest or pelf. Such tendencies may manifest themselves whenever paradigm shifts are involved, and it is the duty of scholars to actively campaign against them and participate in the process of consensus-building. This can only be done slowly and tactfully, and the process may itself be complex, involving initiatives at several levels with a view of inducing suitable changes in policy, and cascading them to other nations or political units.

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[31] Evolving Identities: The English Language in Singapore and Malaysia Vincent B. Y. Ooi Times Academic Press, 2001 - English language - 214 pages

IV.   DUTIES OF AN ANTHROPOLOGICAL PEDAGOGIST

We now list out what we believe will be the various important duties and tasks of an Anthropological Pedagogist. We must also reiterate at the very outset, that this list is only tentative and indicative, and that the list only likely to expand as the field evolves. More areas of study will readily suggest themselves if the objectives of various branches of Anthropology are borne in mind, and meaningful interfaces and discourses between Anthropology and pedagogy are sought. Declaring this list to be comprehensive or close-ended would in a way be tantamount to closing the doors on innovation and creativity, and would be a strict no-no in keeping with the very principles and postulates of our approach, and we invite other researchers to add and contribute meaningfully to this list. These tasks in effect seek to further and enhance the goals of Anthropology using Pedagogy and education as a medium.

A. *To keep abreast with latest research on Pedagogy and allied fields*

The Anthropological Pedagogist must keep abreast with the latest trends in pedagogy and pedagogical research, and must keep himself constantly uptodate with the latest goings on in the field, much as anyone else in the field would, but mainly with a view to understanding and applying these from an Anthropological and Anthropological Pedagogical perspective. This would constitute a crucial area of difference; he should be well-trained to understand the implications of latest developments in the field of education, pedagogy and even, albeit to a much more limited extent with developments in allied fields such as psychology to gauge their implications on Anthropology, and then on Anthropological Pedagogy. Thus, he would retain a limited but a crucial perspective of the latest trends in the field of education, but one that would make a world of a difference on human progress and welfare. Thus, an Anthropologist and an Anthropological Pedagogist would play a critical role in the chain of events, and would even ultimately introduce new paradigms that could revolutionize education, and set the ball in motion all over again. This may even warrant or necessitate under specific circumstances, the creation of entire new sub-fields of study, Anthropological Historiography or even Anthropological Pedagogy being cases in point. In other case, he may follow new trends only with a view to ensuring that they are implemented more efficaciously in line with their avowed objectives.

Novel paradigms are indeed required to meet the demands of the Information age. This requires the learner to be able to assimilate and process large amounts of information. Novel techniques such as Computational Thinking or learning that breaks large problems down into smaller ones, using pattern recognition, algorithms, abstraction etc to help solve real world issues have come into use. Technology is also playing a major role in education, and interactive and technology-centric learning techniques are coming into vogue enhancing the student's learning experience with the use of multimedia, graphics and animation. Future technologies include Artificial Intelligence and Machine learning. In future, learners across the world will be able to communicate with each other seamlessly due to the advent of technology. Critical thinking and independent learning have also become more crucial than even before, as opposed to rote-based learning that was so dominant in the Twentieth century. This is in keeping with the general characteristics of the knowledge-based economy as opposed to the requirements of the old industrial age, and this approach is also known as constructivism.

The following are a sample of the latest trends that have been observed in the field of Education, and the Anthropologist and an Anthropological Pedagogist would well do to be aware and uptodate with the latest happenings. He may also need to test the efficacy and utility of such paradigms from an Anthropological and real-world perspective and also test and evaluate such concepts against all the principles of our approach.

B. *Emergence of Universal Education and internationalization of Education*

Illiteracy is rapidly reducing in most parts of the world, even though the progress achieved has been far from uniform. According to UNESCO statistics, the International Illiteracy rate fell from 22% in the 1960's to around 9% today, and yet this figure includes only basic literacy. There have also been wide variations on the basis of socio-economic status and gender, and the quality of education in some parts of the world leaves much to be desired. Quality of education and Universal access to education is one of the UN's seventeen Sustainable Development goals of 2016 which replaced the eight earlier Millennium Development Goals of 2005, yet progress towards these goals appears to be tardy. There is also no systematic and well-established nexus between quality education and the other SDG's, and yet few will deny that education cannot be evaluated in isolation without association with other goals.

The internationalization of education is another interesting trend. The USA and the UK continue to be hot magnets for students, particularly for students from India or China as exemplified by the large number of student visas granted. Of late, new and interesting trends are also beginning to emerge: China for example, is receiving larger number of Indian Gods than ever before, and India is emerging as a hot destination for students from Africa.

C. *Alternative Assessment*

Alternative assessment is a more holistic approach to student assessment than conventional assessment models, and is in line with the general trend of making education more practical and flexible and fostering a collaborative approach. Alternative assessment models typically endow the student with more flexibility in choosing the type and nature of evaluations and evaluation criteria. The key benefit of this approach is that it can allow students to demonstrate his understanding of the content in a format that suits him the most. These are also referred to as performance tests or tests to determine what students can do or cannot do, including the quality, depth and breadth of their knowledge. Such approaches may include self-assessment, peer-assessment or 360 degree assessment. Another new concept is that of Stealth Assessment. Per this approach, the learner's experiences are captured unobtrusively, and without his knowledge. Blended learning is another exciting field, and this approach combines traditional classroom learning with hands-on, practical and on-line learning. At the same time, full-fledged degrees may gradually fall out of favour

D. *Personalized learning*

Personalized learning involves the creation of learner and context specific learning paths. The day may not be too far off when each and every chapter will be available in different modes and formats, each designed for the learning needs of different groups. Adaptive Teaching on the other hand, uses real world data and metrics about a specific learner's previous learning to create personalized paths. Analytics of Emotions is another interesting area of study. This field calls for understanding cognitive and non-cognitive aspects of a student's mindset, including their drivers, aspirations and frustrations.

E. *Crossover learning and incidental learning*

Crossover learning refers to learning in natural or informal settings such as parks and zoos. This is done with a view to stimulating interest in learning. This is similar to context-based learning which refers to learning within a real-world or a pre-decided context. Incidental learning is often accomplished from real-world or practical incidents and is similar to learning by doing which involves real-world tools. Unplanned or

unintentional learning on the other hand, is learning that contributes to longer term learning paths, usually through the medium of technology. Two way learning or argumentative learning involves as two-way interaction process and is akin to a student-centric learning approach.

F. Brain research

Brain research is now being carried out in a variety of fields. For example, new theories on social and cognitive aspects of the brain are being developed. Experimental psychologists have been publishing papers and carrying out research in diverse fields such as Neuroscience, learning patterns, memory and perception. Cross-disciplinary research is gaining momentum, and this has many ramifications for the field of education as well.

A related field of student which is relevant from our perspective is Psycholinguistics. This field of study analyzes how and why people speak, and write, and the role played by the brain in stimulating speech. This field developed due to the pioneering efforts of Noam Chomsky and was later developed by linguist and cognitive psychologist Steven Pinker and others.

G. Teacherless training

Teacherless training and education seeks to address the lack of teachers or the lack of quality teachers particularly in developing countries in Africa and Asia. This approach seeks to substitute human teachers with a diverse set of multimedia aids. This approach seeks to offer greater consistency in quality and has met with limited success in many parts of the world. However, challenges remain such as a void created by the absence of teacher student interaction. The Anthropologist is uniquely poised to evaluate the efficacy of such approaches vis a vis traditional approaches, and recommend course corrections or transitional and blended approaches wherever necessary with the help of psychologists and other domain specialists.

H. Syllabus Content fixation

One of the key duties of an Anthropological Pedagogist is to provide key and crucial inputs during the process of syllabus and content fixation. This process must of course, be subject to other considerations over which the Anthropologist may have no knowledge or control. He will therefore merely function as a cog in the wheel, and must balance his own interests and considerations with those of other experts outside our stated field to provide a balanced perspective to learners.

Syllabus and content fixation must also satisfy all the principles of Anthropological Pedagogy such as the idea of Mindspace and Learning Mindspace, Maximum relevant learning, Maximum Individual Psychological Impact, Alignment with learning capacity, Mind-orientation, Societal orientation, cultural needs and the like. They must also promote a logical and rational thinking and a scientific temper, and needless to say the core principles of our approach have been explained elsewhere in this paper. Syllabus content may also be formally justified and marked off by other experts, and a useful template may be such as the one provided below:

I. Justification of syllabus content

Justification of syllabus content may be done in the format specified below. Needless to say, this must be reconciled with the breadth of topics taught in the syllabus itself, and all topics currently being taught or proposed to be included in the syllabus must be included for evaluation and justification in a suitable format such as the one specified below. Justifications will include those provided by the Anthropological Pedagogist and the domain specialist:

SNo	Course	Details of Topic/ subtopic	Justification for Inclusion	Principle satisfied	Other justifications / Recommendations for change	Reviewer 1	Reviewer 2
1	Botany	Study of the Venus flytrap					
2		Study of pteridophyta					
3	Geology	The history of the Earth and different phases in the evolution of the earth					
4	Evolution	The history of the evolution of plant and animal forms					
5	Physics	Gravity					
6	Physics	Electricity					
7	Chemistry	Atomic structure					
8	Chemistry	Periodic table					
9	Physics	History of Physics					
10	Chemistry	History of Chemistry					

Yet another approach may be to identify the different types of knowledge that a human uses in his everyday life throughout his lifecycle, and on a routine and systematic basis with particular emphasis on specific cultures, and to assess if and how it is being taught in the syllabus. This can be done formally and systematically in the manner described above, taking into account how important it is in his quotidian life, and whether the knowledge can be obtained from other sources such as traditional knowledge and parental initiation. This can be done either through observations, questionnaires or interviewing. Thus, this approach would in effect, constitute a bi-directional and a multi-dimensional analysis, and must be accompanied by prioritizing.

If this kind of analysis is to prove to be more effective, it must be done taking into consideration the socio-economic group being studied, so that aspects specific to particular socio-economic groups, and those common to all groups may be segregated. This must also be reconciled with drop out statistics so that vital information is included in the syllabus very early.

J. *Triggering innovation and creativity and promoting critical thinking skills*

Innovation may be defined as the act or process of innovating. Several competing and rival definitions of innovation have been proposed, none of which are comprehensive. However, among the definitions proposed, the one proposed by Crossan and Apaydin readily comes to mind. According to them, [32]:

"Innovation is the production or adoption, assimilation, and exploitation of a value-added novelty in economic and social spheres; renewal and enlargement of products, services, and markets; development of new methods of production; and establishment of new management systems. It is both a process and an outcome."

Several indices have been proposed to evaluate and rank innovation capability. Examples of these are the Bloomberg Innovation Index, the "Creative class" developed by Richard Florida, the Oslo Manual, the Bogota Manual, the EIU Innovation ranking, the Global Competitiveness Report, the Global Innnovation Index by INSEAD, the Information Technology and Innovation Foundation (ITIF) Index, Innovation 360 Index developed by the World Bank, the Innovation Capacity Index (ICI) which rated the USA, Sweden and Finland very highly, the Innovation Index developed by the Indiana Business Research Centre for use within the USA, the International Innovation Index developed by the Boston Consulting group and other organizations, the Innovation Union Scoreboard, the INSEAD Innovation Efficacy Index, the India Innovation Index by NITI, DIPP and CII, the State Technology and Science Index developed by the Miliken Institute, and the World Competiveness Scoreboard.

Countries are also commonly ranked based on innovation capability. Countries are ranked based on presence of high-tech companies, manufacturing prowess, patent filing, quality and reach of primary and higher education, research and development capability, and availability of research personnel. [33]

Country rankings tend to vary widely from study to study. The 2018 Bloomberg Innovation Index for example, ranks South Korea in the first slot but omits the USA from the top ten. Other studies rank Switzerland very highly while countries like South Korea and Japan are omitted from the top ten. Most other studies rank countries such as Switzerland, Sweden, the UK, Canada, Germany, and the Netherlands on top. Countries in Africa and South America fare very poorly, although many have tended to improve their indexes. China and India have likewise improved their rankings, albeit very slowly, and there is no systemic effort to understand the root causes for low ranking, and how low rankings can be remediated.

While most such studies are based on consistent and reliable attributes, very little, if anything, has been done by the way of a root cause analysis for high or low rankings, and there has been almost no effort to trace such rankings to the specifics of an education system. This may be the prerogative of an Anthropologist.

Many attempts have been made to define creativity. According to Michael Mumford, "Creativity involves the production of novel, useful products" (Mumford, 2003). According to Robert Sternberg (Sternberg and

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[32] A Multi-Dimensional Framework of Organizational Innovation: A Systematic Review of the Literature Mary M. Crossan, Marina Apaydin

[33] *The Oxford handbook of innovation*. Fagerberg, Jan., Mowery, David C., Nelson, Richard R. Oxford: Oxford University Press. 2005. *ISBN 9780199264551. OCLC 56655392*

Lubart, 1995), Creativity is the production of "something original and worthwhile". According to a definition by Dr. E. Paul Torrance, Creativity is "a process of becoming sensitive to problems, deficiencies, gaps in knowledge, missing elements, disharmonies, and so on; identifying the difficulty; searching for solutions, making guesses, or formulating hypotheses about the deficiencies: testing and retesting these hypotheses and possibly modifying and retesting them; and finally communicating the results.[34]

Creative thinking also means looking at something in a completely new way. It is the very definition of "thinking outside the box." Creativity also includes lateral thinking, or the ability to perceive patterns that are not obvious. Creative thinking can be developed through practice; however some people are more creative than others. Creative people have the ability to find out better or more efficient ways to carry out tasks, solve problems, and meet challenges, and to develop new ways of looking at things. Many creative thinking techniques have been developed such as the Lateral thinking technique by Edward de Bono which involves problem solving through an indirect and a creative approach.

Several indices have been developed to measure creativity. Examples include the Global Creativity Index or CGI by Roger Martin and Richard Florida which ranks countries based on creativity, technology, talent and tolerance. Attempts have also been made to assess the "Creative Class" in different countries, which is a class which plays a major role in driving economic development of a country. This is bound to be much larger in developed countries. This is akin to an intellectual class, but a creative class is more directly translatable to the economic growth in the country. In developing countries and least developed countries, creativity is bound to be low, owing to low levels of education, outdated or outmoded education systems, poor teaching techniques, poverty, backward ideologies and an over-sized role of religion.

The caste system in India and the Apartheid system of South Africa similarly excluded many sections of society from the aforesaid creative class, and may have led to a lowered intellectual output. We have discussed mind-orientation and societal orientation in a great level of detail in a previous work. However, linkages between societal orientation and individual mind orientation, and between individual mind orientation and creativity and innovation must needs to be more clearly established and determined. Perhaps this will need a very critical examination, and be the focus of an entire study, as pro-active approaches to social and cultural change can yield very rich dividends.

Critics of Islam have pointed out that Islamic countries have lagged behind badly in innovation when compared to the developed world, and that this may be attributable to the fact that it has paid scant attention to personality development and innovation. The term Innovation, however does exist, and is referred to Bidah in Arabic. Bidah is an Arabic word that comes from the root Al-Bada meaning to create something new. However, innovation in Islam is divided into two types. The first type of innovation is that which opposes the Qu'ran and is strictly forbidden. The second type of innovation is that which pertains to worldly or economic affairs, and may actually be encouraged.

Islamic scholars have also been quick to point out that Islam indeed had its own Golden Age from the eighth to the fourteenth centuries in which science, medicine and technology flourished. This period may have been crucial for the development of new fields of study such as Algebra, Calculus and Trignometry. However,

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[34] Runco, Mark A.; Albert, Robert S. (2010). "Creativity Research". In James C. Kaufman; Robert J. Sternberg. The Cambridge Handbook of Creativity. Cambridge University Press. ISBN 978-0-521-73025-9.

other critics point out that such innovations, though true, were sometimes exaggerated and had little to do with the Islamic clergy and orthodoxy, and may have taken place despite them, and not because of them. [35]

K. Working towards the 'Sociology of Science'

We have defined the 'sociology of science' as the ability of scientific teaching, awareness, models and frameworks to bring about paradigm shifts in society, and lead to changes in mind and societal orientation in due course. This is possible only through a careful consideration and evaluation of course contents, and to institute proper teaching methods and dissemination of knowledge. The 'sociology of science' is also inexorably intertwined with the 'Globalization of Science' as we believe a large number of paradigms particularly in the social sciences must take into consideration local requirements and uniqueness and use them for all their educational models and eventually for nomothetic rule-building.

However, similar studies have indeed been carried out in the past. The sociology of scientific knowledge may be defined as the study of science as a social activity. The sociology of scientific ignorance is complementary to the sociology of scientific knowledge. Another field is the sociology of knowledge which studies the impact of human knowledge on society and human progress and elevation. Science and technology studies, or science, technology and society studies (which are abbreviated to STS, and evolved in the 1960's) are studies of the impact of society, politics, and culture on creativity and innovation. Such studies also inversely examine how innovation and creativity impact society, politics and culture. Such studies are also sometimes referred to as Technology, society and life studies or studies of technology and culture, and such fields study the interdependence of technology and society on one other.

Studies have also often sought to examine human attitudes towards science and knowledge. Scepticism may be defined as a questioning attitude towards ideas, opinions or beliefs that might otherwise be accepted uncritically by the layman or other individuals. According to the Skeptics society, "Scepticism is a provisional approach to claims. It is the application of reason to any and all ideas—no sacred cows allowed. In other words, scepticism is a method, not a position."

Scepticism, is undeniably one of the foundational values of a scientific society; however over-scepticism may present its own problems and may stake claim to be a pseudo-science in its own right, and rather curiously so. One must reiterate here that over-scepticism, pathological scepticism or sceptopathy may be another kind of disease and may by itself quantify as a pseudo-science or a dogma. This issue has been under-investigated over the ages; it may be time to step up research on this particular phenomenon by linking them to practical and real-world examples and scholarship.

L. Creation of Rational individuals

One of the objectives of a sound education system is to create rational individuals for the benefit of society as a whole. Rationalism may be defined as the practice of basing opinions and actions on logic, reasoning and sound epistemological knowledge rather than on religious or dogmatic beliefs or emotional responses. As a generalized definition, as opposed to a subject-specific definition, it is the process of acting in accordance with reason. Rationalists rely on reason as the basis of interpretations of observations or the discovery of truth often downplaying perceptions in the process.

However, no individual is rational to a perfect degree. Some individuals are more rational, and some less so. Individuals are also influenced by the zeitgeist of the period, and also by the society's cultural norms. There are also limits to individuality, and even liberal societies possess norms. However, individualism has been on

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[35] George Saliba (1994), A History of Arabic Astronomy: Planetary Theories During the Golden Age of Islam, pp. 245, 250, 256–7. New York University Press, ISBN 0-8147-8023-7.

the rise for the past couple of centuries in most parts of the world, and this has impacted the rational thinking process rather positively. The idea of "'bounded rationality', has recently gained traction, and according to this concept, humans have biases and cognitive limitations that prevent them from realizing full rationality. Thus, humans often opt for compromises and refrain for making optimal decisions. A sound and well-conceptualized educational system not only seeks to encourage rational individuals, but also modifies society or human enterprise in such a way that the creation of logical and rational individuals is encouraged in the long-term through amelioration and emancipation so that the 'zeitgeist' can itself be partially or fully got rid of or suitably changed.

M. Educating people on science and pseudo-science

While it is hard to deny the fact that human biases and prejudices may to a very large extent be natural and cannot be entirely got rid of, any healthy approach must seek to minimize and eventually work towards the reduction and elimination of all kinds of biases both personal or ideology-driven, and other kids of prejudices and non-objective approaches in the long term.

While quantifying and trying to minimize personal biases and prejudices, a trade-off between what may be considered over-idealistic and unachievable and what should be enforced in the greater interests of society may be arrived at through discussion and introspection.

N. Let us now seek to understand and formalize the key characteristics which define pseudo-science 36:

Pseudoscience begins with a hypothesis often mired in pre-conceived notions that are self-defined—usually one which is appealing emotionally to at least a section of society, and then looks only for data which supports it, ignoring all other kinds of data. Thus, the ostensible goal of promoters of a pseudo-scientific concept is to vindicate their own stand by hook or crook, often to the detriment of the wider populace and the interests of science in general. This has typically been the approach of Hindutva demagogues and fire-brand leaders all along, who have an ideological axe to grind. We have discussed their nefarious tactics at great length in a previous paper, and it would be pointless to reiterate them here. Marxist historians too always look for, or reinterpret to suit their preconceived notions, and this alone would be enough to brand it as science of a low calibre.

Practitioners of pseudo-science also do not often seek out evidence from one or more related fields of science, or verify if their postulates contradict well-known natural laws and principles and laws of science. They operate with pre-conceived notions and believe there is no more to be learnt.

In pseudo-science, the emphasis is not on controlled or repeatable scientific experiments. Instead it is on unverifiable testimonies, hearsay, grapevine and rumour. The need for rigorous scrutiny is often brushed under the carpet and conveniently ignored. In some cases, practitioners of pseudo-scientific approaches may go as far to indirectly state or hint that a discovery of the truth is outside their purview or jurisdiction, usually throwing indirect clues to this effect.

Pseudo-science may also achieve an aura of respectability in popular circles, and may intelligent men may believe them to be true, and at least for a brief period in time. For e.g. belief in UFO's, Aliens etc. However, in this era of globalization, the ubiquity of the internet, the digital revolution and understanding of cultures, pseudo-sciences are gradually expected to die out. One way to combat pseudo-science would be to ensure that scientific method is taught to students all across the world such that they can formulate their own opinions from a very young age.

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[36]Pseudoscience: A critical encyclopedia Brian Regal Greenwood Press 2009

Robert K. Merton has also defined additional norms to distinguish real science from pseudo-science. According to him, bonafide science possesses the following five attributes: (a) Originality: must present something new to the scientific community (b) Detachment: The scientists must not have any personal stake in the outcome of an experiment (c) Universality: Experiments must have universal value (d) Scepticism: Science must not be based on faith (e) Public accessibility: Results of experiments must be made available to the public at large. Most of these observations would apply to the field of historiography too.

We also strongly believe that compartmentalizing approaches, thoughts, ideas and processes into 'science' and 'pseudo-science' may not always work. Can anyone take the approaches of Hindutvavaadins, Marxist historians, Dravidian nationalists and Euro-centric Indologists and see which category they belong to?

Thus, ranking approaches on a scale of 0 to 5 or 0 to 10 may fit the bill instead. One must recommend that this exercise be undertaken with a great deal of anticipatory thought and comprehensive and well-weighted rankings, as it would entail enormous rewards for science. For this, one of the virtues would be patience and forbearance, and the fruits of the endeavour would be great. Of course, a rating of 5 or 10 as the case may be unattainable or even undesirable given the vagaries of human nature and the constraints and limitations that careerism always poses; However, the average rating of all endeavours in the field of historiography on our scale described above can be pulled up greatly if the principles enshrined in this paper are implemented, and all this will be to the general benefit of science and scholarly endeavour.

O. Towards a just and equitable society

The term 'Utopia' was coined by Sir Thomas More in his 1516 book "Utopia" and describes an imaginary community or society that possesses highly desirable or nearly perfect qualities and meets the needs and aspirations of its citizens. Several sets of attributes that help characterize utopias have also been identified, such as the presence of individual creativity and fairness, equitable treatment of all its citizens etc. Several other definitions have been proposed for the term Utopia by several authors, and though some of these let the respective author's imagination run riot, they basically follow the same underlying theme. The exact opposite of the term 'Utopia' is generally taken to be 'Dystopia' which is characterized by a lawless society, where the scope for individual creativity is limited or which is marked by over-sized or totalitarian governments.

Just or equitable societies are also marked by 'Equality of opportunity' as opposed to strict artificially-enforced equality. Equality of opportunity is the idea that people should be able to compete on equal terms, or on a "level playing field. This principle may be severely compromised if society is inherently unjust. i.e. if there are barriers to entry in education or privileged positions on account of class, family background or caste. Just or equitable societies can also be achieved through fair and equitable education systems. Sadly, this is not the case in most developing countries where the quality of education varies widely.

For example, in Pakistan, small groups of highly privileged individuals send their children to elitist schools. Most send their children to government schools where the quality of education is several notches lower. A third group comprising those who are more religiously-inclined send their children to Madrassas, which offer a more religiously-patterned but less secular education. To complicate the situation, English is increasingly needed for success in fields such as science and technology, and proficiency in this language varied widely even based on family background, automatically creating artificial barriers of entry. The results are deep-rooted chasms that are transmitted from generation to generation. Society has tended to work around this issue by adopting differentiated patterns of economic activity or occupational patterns, and this has led to artificially induced economic inequalities. Some myopic politicians may have sought to address the issue by restricting English or relegating its role to the background, but this practice is in general more regressive, does not take into consideration dynamics of language, and handicaps students as a result.

Achieving absolute equality in the quality of education imparted to students from diverse socio-economic backgrounds may be impracticable, if not impossible, but the Anthropological Pedagogist may seek to remediate the situation by bridging the wide chasms that exist between students belonging to diverse groups particularly in developing countries and non-egalitarian societies, and also counter it by designing clever and intelligent programs such as those that focus on vocational training. Linking the education system with the society's economic activities or orientation, or the economic activities of specific socio-economic groups may also help, as this may positively impact the fortunes of the underprivileged. At the same time, efforts must be made to improve the quality of education provided to under-privileged sections of society in the long-term. Politicians in some societies have unfortunately adopted the opposite stance in the name of equalization or democratization adversely impacting their countries economic development. Scant attention has been placed on the well-being of their country's creative class or intellectual class, the nation's inherent economic strengths, competitive advantage or natural economic pursuits. Thus, the alignment of the country's education system with its economic models will constitute one of the duties of the Anthropological Pedagogist, if not his most important one.

P. A counterweight to political constructs

Education is today almost exclusively paid for and administered by governmental bodies or bards, and to a much more limited extent by other non-profit institutions. Even in situations where the government does not directly administer education, governmental bodies retain a controlling interest in crucial affairs such as content fixation, evaluation and other crucial factors. This can be a boon as well as a bane; forward looking and progressive governments have the wherewithal and the means at their disposal to conceptualize well-conceived frameworks that work in the overall interests of societies.

Sadly this is not always the case. Political exigencies and vested interests curtail politicians' freedom. In addition, politicians particularly from developing countries are hamstrung by lack of exposure to recent trends, and even to the rest of the world. An interesting case in point was the 'Angrezi Hatao' or Banish English campaign which was a very strong and emotive movement in India in the 1950's and 1960's. Important leaders of the movement were Ram Manohar Lohia and Atal Behari Vajpayee and cities like Allahabad and Lucknow were major centres of the movement. Later supporters of this movement such as Mulayam Singh Yadav were much more hidebound and parochial. Many leaders of this movement were hypocritical too, as they sent their children to the best English schools. As India had gained independence from British rule, the English language was considered passé and a symbol of a bygone era and had to be phased out as quickly as possible keeping in mind the provisions of the constitution which favoured phasing out of English by 1965. By all accounts, this movement was a failure as it strongly reeked of parochialism, and came to be decried as Hindi imperialism- it had few if any supporters in the West and East, and had virtually no supporters in the South. However, the learning of English did greatly suffer and stagnate in the 1970's due to India's inward looking and autarchic policies and the thrust given by governments of both Hindi and non-Hindi states to Hindi or their own respective languages. Gujarat, for example equated English learning with Macaulayism which favoured relegating Indian languages to a second-tier status. Some states like West Bengal took much more myopic and ill-conceived stands: not only was Hindi never taught, but the learning of English was effectively abolished at the elementary school level in the early 1980's during the time of Communist rule in that state, only to be reintroduced many years later. Thus, such movements never took into consideration the dynamics of language both within and outside of India, as well as the constitutional role of English in India, even before globalization. Intellectuals protested, but their voices were muffled. Unfortunately, students were made guinea pigs, and their employment prospects suffered.

Needless to say, learning in the mother tongue offers several inherent approaches, and to part-remedy the situation, states like Karnataka have been experimenting with the transferrable skills approach where the mother tongue is first taught, and English is later introduced. Malaysia once toyed with the idea of teaching Maths and Science exclusively in English, but this proposal met with stiff opposition. It would be erroneous to assume that English will rule the roost forever, and its influence may wane in the long-term. Thus, the Anthropological pedagogist is well-poised to offer unique advice to politicians and policy-formulators in keeping with Edward B. Tylor's definition of Anthropology as a policy science.

Given the lack of awareness and the rather limited education of the archetypal Indian politician and decision-maker, one of the auxiliary duties of the Anthropologist may be to create awareness among the public as required to provide a counter-weight to such attitudes and set the ball of change rolling.

Q. Creating awareness among intellectuals

Another important objective of a practitioner in this field will be to create awareness among intellectuals, or goad them into action wherever they are dormant or inactive, and harness their collective intellectual synergies such that they begin to play a key role in charting the course of the education system. This becomes particularly important wherever, this class is given the short-shrift, or it voice oppressed. This class can act as a crucial link in the chain, and provide further critical inputs for the development of the system or the remediation of the status quo. The Anthropologist would well do collect their feedback on critical or crucial issues of the day, and this would form an inalienable part of his core set of duties.

R. Elimination of Vested interests and consensus building

A vested interest in this connection may be defined as a personal reason or an ulterior motive for the involvement in an undertaking or situation, especially an action that seeks to block or impede a new or an ongoing initiative. Another related concept is that of a conflict of interest which is a situation in which a person is involved in multiple interests, and serving one interest could involve working against another. Typically, this relates to situations in which the personal interest of an individual might adversely affect a duty owed to make decisions that work in the interests of science or society.

- *Possible vested interests*

A range of vested interests may work against the successful adoption and fruition of Anthropological Pedagogy; needless to say, this will warrant a paradigm shift in many areas, and it is not likely that the change will be smooth. We present below a possible range of reactions that may emerge against such initiatives.

- *Eurocentrists*

One possible source of opposition to increasing standards of education in developing countries emanating from new and innovative educational models may come from vested interests in developing countries who do not want old economic equations or the status quo affected. This has typically worked in favour of retaining the power of the elite or the old guard in developed countries at the expense of the emancipation of people in developing countries. Eurocentrism has been defined as a point of view biased in favour of Western Civilisation; however, vested interests may rear their ugly head from other parts of the globe too, particularly those which tend to operate in cahoots with such forces.

- *Academicians*

Another possible source of opposition to new educational models may come from academicians from different parts of the world including developing countries such as India, who do not want old academic or teaching models to be upturned. Any sudden shifts are bound to involve some amount of pain to all parties impacted by it, more so if this involves mass restructuring of syllabi.

- *Religious heads*

Religious heads and leaders may likewise oppose several aspects of the teaching of science such as evolutionism, the scientific method, and an emphasis on practical learning over rote learning. For Buddhists and to a smaller extent, the Hindus, the theory of evolution may not pose a fundamental conflict with the core tenets of their religion. However, Christian fundamentalists, do tend to portray evolution and religion as in opposition to each other. Islamic views on evolution are wide-ranging, and encompass positions ranging from theistic evolution to creationism. Some Muslims around the world believe that humans and other living things have evolved over time, while some others believe they have always existed in present form.

- *Ideology-driven scholars*

Many other ideology-driven scholars are likely to provide a stiff opposition too, and not the least among them are likely to be Marxist Historians, who arguably espouse an approach that has long outlived its utility. Marxism has claimed to have taken science seriously, and claims to have stood by science in opposition to dogma and hidebound tradition. Yet, its claims to science have been critically evaluated by Michael Burawoy and others. We had argued aspects of Marxist Historiography were similarly outmoded, and would stand in stark contrast or opposition to the principles of Twenty-first century historiography. Post-independent India Marxist scholars have included D. N Jha, Romila Thapar, Irfan Habib, K N Panikkar and others, but their influence has gradually been waning. [37] [38] [39]

- *Nationalists*

Colonial Historiography and Eurocentrism played a crucial role in provoking a nationalist reaction. This reaction came in the form of a nationalist approach in historiography which sought to restore national self esteem by glorifying India's past, and rejecting all things western. The nationalist history sought to counter the earlier imperialist bias in historiography and provide a communal interpretation of history that began to gain influence from the early decades of the century.

The phrase nationalist historians were first used by R.C. Majumdar, to denote those historians of India whose writings had nationalist bias, especially during the period of colonial occupation. R,G.Bhandarkar, H.C.Raychoudhary, J.N.Sarkar, G.S.Sardesai, S.Krishna Swami Ayyangar, Lalalajpath Roy, C.F.Andrews, Pattabhi Sittaramayya, Girija Mukharjee were important nationalist writers.

However, Hindutva nationalists tended to ride piggy-back on the works of Nationalist writers and impose their own pseudo-scientific constructs of history. Such works were further encouraged by Hindu Nationalist parties of India. Instead of trying to correct colonial biases through bonafide methods, they sought to introduce their own flawed, quasi-mythological perspectives of history. As they have now become a force to contend with, they are bound to furnish a stiff resistance in the quest for new bias-free historical models.

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[37] MARXISM AS SCIENCE: HISTORICAL CHALLENGES AND THEORETICAL GROWTH MICHAEL BURAWOY University of California, Berkeley

[38] Historiography by Objectives: A new approach for the study of history within the framework of the proposed Twenty-First Century School of Historiography Sujay Rao Mandavilli ELK Asia Pacific Journal of Social Sciences Vol 1, Issue 2 (2015)

[39] Enunciating the Core principles of Twenty-first Century Historiography: Some additional extrapolations and inferences from our studies and observations on Historiography Sujay Rao Mandavilli ELK Asia Pacific Journal of Social Science (ISSN: 2394-9392) in Volume 2, Issue 4 July to September 2016

It would not be too unrealistic to expect the Hindutva ideologues will put up a valiant opposition to meaningful attempts to introduce new educational frameworks to replace effectively outmoded ones, and attempts to convince them may often prove to be futile, requiring in more cases than not, a generational change.

Much has been written about the damage done by leftist ideologues to Education in India particularly in the West Bengal. (This may have been trigged by the fact that Marxism suddenly was perceived to be obsolete and passé) Little is however being done to furnish a structured criticism of RSS and Hindutva ideogogues' comedy of errors since then, and their errors of omission and commission in this regard.

S. Creation of New Educational Models and Frameworks

Models of teaching and learning refer to the ways in which learning environments and methods of instruction can be constructed, structured, and delivered. The bottom line of this approach is the search for better teaching methods and delivering an effective learning experience.

Educational Models and Frameworks may comprise theoretical or instructional frameworks, patterns, or different types of educational components — curricula, teaching techniques, instructional groupings, classroom management plans, content development, delivery, the development of support materials, presentation methods, etc. in some cases, teaching models may even be culture specific or specific to a field of study.

New educational models and frameworks are required to motivate students to learn better, expand the reach of the education system, achieve consistency and uniformity, and map educational models to learning outcomes by understanding why some methods work and some do not. In some cases, it may call for restructuring methods of teaching from time to time to meet the changed landscape.

The Anthropologist is also expected to play a key role in evaluating different types of learning methods including novel methods from an Anthropological perspective by ensuring that they satisfy all the principles of Anthropological pedagogy enshrined herein, or those that may gain currency in the future.

Course content may need continual revamp, and as a crude rule of thumb, every component of the education system must be justified on some sound epistemological basis. It would be ideal to do this comprehensively and in a structured fashion. Keeping in mind our concept of mindspace, a pecking order must also be established.

T. Anthropological Historiography

Another exciting approach to Historiography is Anthropological Historiography, and we had introduced the core postulates of this approach in an earlier paper. This would involve integrating historical studies, inter alia, with proto-history and pre-history. It also involves an integration between these epochs and the Lower, Middle and Upper Paleolithic periods, and the later Mesolithic, Neolithic and Chalcolithic periods. Integration will also need to be accomplished with related fields such as primatology, and broader theories of evolution. A better integration between different periods in history and across regions would also be a highlight of this approach, and this would deliver a cogent and a coherent experience to the student. We had also proposed replacing History with Anthropology in the long-term and integrating it with essential aspects of history and sociology, but the political ramifications of this need to be worked out.[40]

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[40] Introducing Anthropological Historiography as an integral component of Twenty-first Century Historiography: The role played by Anthropological Historiography in the attainment of long-term Anthropological goals and objectives International Journal of Innovative Science and Research Technology, February 2018, Volume 3, Issue 2

U. Fieldwork across the world

Fieldwork is the bread and butter of an Anthropologist, and this field is to the Anthropologist what the laboratory is to the scientist. One of the most common technique in fieldwork is the Participant Observation technique.

The term "Participant observation" was first believed to have been coined in 1924 by E C Lindeman and was identified as a fieldwork technique by Clyde Kluckhohn in 1940. Per this approach, the Anthropologist chooses the people, the geography and the cultural area for his study, reviews the literature and details of past Ethnographic work, and begins to learn the basics of the culture such as the language, customs and taboos. He slowly begins to build a rapport with them, making personal acquaintances and relationships with a spectrum of individuals, but only to the extent necessary. Thus, unethical personal relationships are avoided. He also observes their daily chores and rituals with due diligence, while staying alert for unanticipated occurrences or seasonal events that may reveal hitherto unstudied aspects of their culture. Field notes and diaries are systematically maintained. Translators are often used (Powdermaker (1961), as also tape recorders (Lewis (1961)) and the latest recording devices such as laptops, voice recorders etc. Other techniques such as interviewing, questionnaires, projective techniques (Such as Thematic Apperception Test and Rorscharch ink blot tests) are often used. Variants of Participant observation include semi-participant observation, hidden observation and indirect observation.

Several approaches have been proposed to counter bias, such as the Emic approach. These are however, not always prejudice-free. Locales are often selected based on the Ethnographer's whim or pre-conceived notions, often known as scholastic fads, and there is no comprehensive coverage of issues and locations. To counter this, we had proposed another approach in another paper where attempts would be made to cover all cultures, or representatives of each kind of culture. Ethnography must also be integrated with studies of student performance and understanding, as these will go hand in hand in ensuring optimal and better-tweaked education systems. Thus, fieldwork and ethnography will be one of the crucial tasks of an Anthropological Pedagogist, and ethnological techniques will be used to synthesize findings and results into a meaningful whole. [41]

Structured and semi-structured interviews may be carried out with a sample set of respondents in the manned explained below. These would be expected to cover a gamut of topics and a wide variety of respondents and scenarios must be targeted. In this case, the knowledge of respondents on a wide variety of issues is being tested and the results thrown up are rather alarming.

Sujay Rao Mandavilli

[41] Ethnography in Educational Research: The dynamics of diffusion David M. Fetterman RMC Research Corporation

S. No	Name of person interviewed or cited	Location	Educational Attainment	Blooper	Possible remediation
1	Rajesh (Name changed)	Anantapur district, Andhra Pradesh, India	7th grade (Government school)	Believed in the Flat earth; has no idea it was round	Teach Evolution and Astronomy as an antidote to religious inspired constructs.
2	Krishnakumar (Name changed)	West Godavari District, AP	5th grade (Government school)	Believed that the earth was 2000 old. Traced it from the current Gregorian calendar.	Teach Evolution and Anthropological Historiography as an antidote to religious inspired constructs.
3	Sreenivasulu (Name changed)	Anantapur, AP	7th grade (Government school)	Sun goes around the earth. Did not know anything about the solar system excepting for some astrology: Education apparently failed him badly.	Teach Astronomy which is barely taught in schools, as an antidote to religious inspired constructs.
4	Manish (Name changed)	Bangalore	10th grade (Government school)	Dinosaurs are unscientific; heard of them but did not believe in them. He however, believed in mythology.	Teach Evolution which is barely taught in schools, as an antidote to religious inspired constructs.
5	Dr. Rakesh Kumar (Name changed)	Bangalore	Ph.D	Believed in Pushpaka Vimanas after completing Ph.D	Teach students how to distinguish between science and pseudo-science.
6	Satyapal Singh	Satyapal Singh is India's Minister of State for Human Resource Development responsible for	Post-graduate in Science	Evolution is unscientific	Teach Evolution which is barely taught in schools, as an antidote to religious inspired constructs. Discuss all the evidence available and the lacunae with other models.

			Higher Education.		
7	Dr Zakir Naik	Islamic Preacher	Ph.D	Evolution is unscientific	May have vested interests here. Classes on Anthropological Historiography and the origin of religion may help.
8	Dr. Dinesh Sharma	Deputy Chief Minister of Uttar Pradesh	Ph.D	Sita Test tube baby	Ignorance. Teach the concepts of science better. Anthropological Historiography must include the history of science.
9	Tripura CM	Media		Internet in the Epic Age	-do-
10	Zaheeruddin (Name changed)	Silchar, Assam	Class XI (Government school)	Despite being a Muslim, was not sure who Aurangazeb was.	Poor quality of education. Evaluate course contents and teaching methods. Evaluate teacherless training and other methods.
11	Various	Various	Various	The history of copper, bronze or Iron is unknown. The history of the origin of various technologies are unknown.	Remediate as applicable. Evaluate on a case to case basis
12	Various	Various	Various	No concept of time. Basic co-ordinates of time not understood	Focus on basics of history. Read concepts of Twenty-first century historiography

These responses may be analyzed by suitably selected parameters such as culture and religion, such that special remediation efforts by group may be conceptualized and devised. We have spoken all along about the 'Globalization of Science' and the 'Universalization of Education', but if the former is to be achieved, there may be no alternative to culture-specific fine tuning and adjustments.

Long-term quality assessment and educational trends can also be assessed through suitably designed fieldwork techniques, and a preliminary assessment would indicate that the results are far from satisfactory. The picture is bleak because of incessant melding by politicians, and the situation has hardly improved in most countries over the past several decades. This is in spite of the prevalence of technology in today's world which should have actually aided learning out come. From our perspective, several factors may be blamed. These

include the influence of politics on education, dynamics of language and mindspace, some of which were discussed in great depth in our previous papers.

While carrying out suitable allowance must be made for

- Parenting and family background
- Individual differences and general population characteristics
- School performance

Thus, time is not necessarily a leveller. The idea of time as a great leveller is a myth. Outliers will always persist. However, our approach can lead to a better quality of education for marginalized sections of society, and lead to a more democratic, inclusive society. The Anthropologist can also help obtain a pulse of the long-term direction of the education system through suitably designed techniques such as before-after study and dual study.

S. No	Case study	Location	Educational Attainment	Time frame	Remarks
1	Mahatma Gandhi	Porbander, Gujarat	Law	1880's	Mastered English and other foreign languages. Knowledge and linguistic skills were no barrier for him.
2	Srinivasa Ramanujan	Erode, Tamilnadu	Bachelor of Science	1900's	Brilliant Mathematician
3	Sir Mokshagundam Vishveshwarya	Muddenahalli Village, Karnataka, India	KCIE, FASc.	1880's	Engineer par excellence
4	Dr. Hanumantha Rao (Name changed)	Srikakulam, AP	Ph.D (Studied in a government school in a remote village)	Completed class XII in 1956. Ph.D in 1965.	Mastered English and several foreign languages. Excellent grasp on Theoretical physics.
5	Rakesh Tiwari (Name changed)	Allahabad, UP	Class XII (Government school)	Completed class XII in 2010, Now pursuing graduation and can only become a Hindi teacher.	Knowledge of English was non-existent. Had not heard of the word "develop". General Knowledge poor. RCA to be done. Leaving aside individual differences, schools are not able to provide a basic platform or a minimum level of knowledge to enable talent to take wings.
6	Rahul Goel (Name changed)	Allahabad, UP	Class XII (Government school)	Completed class XII in 2010. Does	Knowledge of English was non-existent. Had not even heard of the word "develop".

				not know what to do next.	General Knowledge poor. RCA to be done. Leaving aside individual differences, schools are not able to provide a basic platform or a minimum level of knowledge to enable talent to take wings.
7	Zaheeruddin (Name changed)	Silchar, Assam	Class XI (Government school)	Completed class XI in 2013	Despite being a Muslim, was not sure who Aurangazeb was. Knowledge of English was non-existent. RCA to be done. Leaving aside individual differences, schools are not able to provide a basic platform or a minimum level of knowledge to enable talent to take wings.
8	Samujwal (Name changed)	Bengal	Class XII (Government school)	Completed class XII in 2011	Knowledge of English non-existent. Had some general knowledge. Most of his talent has gone waste as he is not able to secure a good job.
9	Rana (Name changed)	Bengal	Class XII (Government school)	Completed class XII in 2011	Knowledge of English non-existent. Had some general knowledge. . Most of his talent has gone waste as he is not able to secure a good job.
10	Nimish	Uttar Pradesh	Class XII (Government school)	Completed class XII in 2011	Was imparted a high-quality education. This shows a wide rift between various streams of education.

- *Health check of the Creative class and the Intellectual class*

    The Anthropologist may also be poised to carry out a health check of the creative class from time to time, and assess its size. The creative class is a socioeconomic class first proposed by American economist and social scientist Richard Florida. According to Florida, the creative class is the key driving force of economic development of post-industrial cities in the United States, but needless to say, this can be applied in other contexts. According to him, the creative class is comprised of a Super-creative core comprising of twelve percent of all jobs (E.g. Science, Technology, Engineering, Research, programming) and Creative Professionals comprising knowledge based workers such as those working in healthcare, business and finance.

    An intellectual on the other hand, is a person who carries out critical thinking, research, and reflection about a society and proposes solutions for its different kinds of problems. Intellectuals constitute the intelligentsia, a class traceable to the French Bourgeoisie usually organized by ideology (leftists, right of centre, revolutionary, democratic, communist, conservative, fascist, socialist, liberal etc) or by nationality.

Intellectuals were hunted down in many regimes particularly military, fascist and dictatorial regimes, which saw them as a threat to their power. Examples of such regimes were the Pol Pot regime of Cambodia in the 1970's. Another interesting phenomenon was the Bhadralok class or the Bengali intelligentsia which was once a force to reckon with, and the communist-inspired education system may have had a role to play in its demise. "What Bengal thinks today, the rest of India thinks tomorrow", a popular adage went. However, the roles have since then been in dramatic reversal; the flight of intellectuals and capital from the state increased as the state's economy suffered immeasurably. The state's education system suffered greatly under communist rule; English was virtually abolished at the primary level. Teachers in schools, colleges and universities were political appointees, and resultantly quality dropped alarmingly. What did educational systems do to foster intellectualism? Rather than leave everything to chance, an approach based on sound theory combined with fieldwork-driven course-corrections and metrics may be in order.

V. *Implementation locally and across nations and cultures*

Another key task would be to implement proposals in different cultures and political contexts, and track changes to fruition and completion. Needless to say, this would be easier said than done, and would involve the co-operative efforts of planners and policy-makers and even politicians across the spectrum.

Of late the winds of change have been blowing favorably. Yogi Adityanath, the Chief Minister of Uttar Pradesh, has drummed up support for the teaching of English in that state, and this marks a welcome departure from the ultra-conservative attitudes of his political party. He has also spoken of the need to introduce English and computers in Madrassas or Islamic schools. The Indian state of Uttarakhand is also beginning to accord priority to the teaching of English, and has even listed out basic words and expressions from where to begin the learning process. More recently in 2018, Haryana has launched an "I am not afraid of learning English" campaign to instill a sense of confidence among learners of the English language.

W. *Formation of international and other bodies and setting their agenda*

There are many international or quasi-international bodies and think-tanks involved in the field of education, and these operate in very diverse fields. Many of these have been setup with a view to carrying out grassroots research, formulating educational policy and guiding various governments on education policy. We present a broad overview of such institutes and institutions below. However, our approach needs to straddle the worlds of both pure research and policy, and overcome barriers across a gamut of fields:

- The United Nations Education, Scientific and Cultural Organization or UNESCO was founded in the year 1945 and is "committed to a holistic and humanistic vision of quality education worldwide, the realization of everyone's right to education and the belief that education plays a fundamental role in human, social, and economic development." Their mission is to help in the attainment of long-term peace, eradicate poverty and achieve development through inter-governmental dialogue and discussion. UNESCO's membership includes over two hundred countries, out of which nine are associate members.
- Established in the year 1946, the United Nations International Children's Emergency Fund or UNICEF envisions a world in which the rights of every child are recognized. Their goals include reducing inequities and discrimination, and fulfilling global education goals such as the Two Millennium Goals that focus on education, achieving gender equality and equity in education, ensuring that every child has the opportunity to learn.
- The Association for Childhood Education International (ACEI) is a worldwide community of researchers and educators advocating education reform. Their stated mission is "to promote and support in the global community the optimal education, development and well-being of children." This association hosts the Global Summit on Childhood which invites professionals to discuss issues facing children and different aspects of childhood, from education to health and well-being and brings together diplomats and

professionals in education to find solutions to the problems that prevent children from receiving a complete or a satisfactory education.

- Education International is a coalition of thirty million professionals in the education sector representing four hundred organizations in one hundred and seventy countries. This coalition was setup to promote quality education and equity in society and combat other issues such as racism and other forms of discrimination that prevent children from receiving a quality education.

- The Global Partnership for Education (GPE) operates in around sixty developing countries working through governments, international organizations and teachers. Their mission is to work with various organizations to deliver a good, quality education to all boys and girls by developing new strategies for education, promoting collaboration in education, financing implementation of new programs and assessing progress on various fronts.

- Founded more than seventy-five years ago, Plan International which is one of the largest children's development organizations in the world, and this organization works across cultures. Their conception of a utopia is one in which all children realize their full potential and where their right to dignity is also maintained. They also aid deprived children, their families, and their communities by allowing them to meet their basic needs and lead more fulfilling and enriching lives.

- The goal of "Save the Children" is to promote global education and the rights of children around the world. To increase the quality of instruction particularly among the marginalized, "Save the Children" promotes quality in teaching and education both within and outside the classroom.

- Akshayapatra is a program that seeks to provide millions of school children nutritious mid-day meals to ensure that poverty in not a deterrent which prevents them from attending school. Thus, it seeks to convert a crisis into an opportunity and curtail the drop-out rate.

- The Alliance for International Educational and Cultural Exchange is an association of seventy-nine non-governmental organizations comprising the international educational and cultural exchange community in the United States. Their mission is to formulate and promote public policies that support the growth and well being of international exchange links between the people of the United States and other nations

- Council on International Educational Exchange or the CIEE's mission is "to help people gain understanding, acquire knowledge, and develop skills for living in a globally interdependent and culturally diverse world." CIEE provides outbound international education experiences for university students, faculty, and administrators, and study, work, and internship opportunities for people entering the USA.

- EURASHE or the European Association of Institutions in Higher Education is an association of European Higher Education Institutions which comprises Polytechnics, Colleges, and Universities devoted to Professional Higher Education and related research for Bachelor's and Master's programs. The mission of the association is to promote the interests of professional higher education in the member countries of the European Union and in other European countries, in particularly in public or recognized institutions.

However, none of the institutions listed above are geared to pursue the principles of Anthropological Pedagogy. We believe these are an altogether different class of objectives and must be pursued to their logical conclusion once the process of consensus-building has been accomplished. This is one step behind the curve: the first logical step is to freeze theoretical frameworks through consensus.

V.　MIND-ORIENTATION AND PERSONALITY DEVELOPMENT

Mindspace shifts may also be triggered by 'Eureka points' which we may refer to as unanticipated or unexpected shifts brought about through the occurrence of specific events. Mini-Eureka points are also like Eureka points and Mini-Eureka points – however, they are less significant and less important. These can often bring about mind-altering or permanent changes in an individual. This approach not only allows us to analyze the underlying causes of change but also to predict cultural shifts due to disruptive technologies or other changes with greater precision. It also allows us to prepare a cause and effects diagram with a great degree of precision by analyzing all downstream effects of any decision. Consequently, it also allows us to make course corrections wherever they are required in the interests of society by taking proactive measures. This concept also comes into play at the time of syllabus formulation.

One way to formulate Eureka points and Mini-Eureka points is to identity lacunae in a given society, or generate a list of societal problems, and then use it to generate a list of ideal solutions. In cases where issues are unresolved, several alternative perspectives may be presented to students so as to induce cognitive dissonance and trigger course corrections. This, we believe is a very structured and systematic way of bringing about change through the medium of education. Criteria for testing in the short, medium and long-term may also be devised such that the observations and lessons learnt can be used to restructure and redesign the education system, wherever necessary.

Aspects such as the research of the impact of Eureka points on mind-orientation and modal mind-orientation and also on innovation and creativity (and downstream cultural transformation, and change in societal orientation may also need to be carried out), as this can constitute a key input for further changes.

Another pre-requisite for this may be to ascertain the components of Mindspace, which in layman's language would constitute a person's mental makeup. Mindspace may be bounded as well as unbounded. In other words, the human psyche may retain some space for spiritual pursuits, some for altruistic or charitable work. These are akin to compartments which may not be necessarily water-tight. Some movements may be possible, but the freedom for change may be relatively limited given the working of the human brain and various pulls and pressures of society. Movements within these compartments would be relatively easier, than those across compartments. Components of mindpsace may vary from culture to culture, and from person to person widely, and there also may be modal characteristics in a given society. Thus, most humans may not in the ordinary course of events be able to get rid of religion entirely.

Thus, the proclamations of Atheists like Richard Dawkins may be ill-conceived. We see this as another useful application of Mindspace. Rather than to attempt to get rid of traditional religion entirely, alternatives may be sought. Changes in mindspace, mind-orientation and societal orientation may therefore only be triggered through suitable changes in the education system which takes these vital facts into account. More research would be necessary to ascertain or establish this, and a well-conceptualized research design may be in order which would include meaningful short-term and long-term studies. In recent years, the Chinese government has been making covert and overt attempts to rein in various Muslim ethnic groups such as the Hui which it believes pose a serious threat to the nation's unity and sovereignty. The government's moves have included sending Muslims to detention camps in Xinjiang and elsewhere, where they are brainwashed into toeing the communist party's ideology. Other restrictions have been placed on them such as making the Chinese flag mandatory on Mosques. This smacks of similar moves made by the Chinese Cultural Revolution of the 1970's under Mao Zedong. Such moves are likely to fail, as they do not take the concept of Mindspace into account which would imply that Atheism cannot replace religion in most cases given that humans will not be

able to function like robots. It also may violate the principles of cognitive dissonance. If not properly conceptualized, structured and implemented, cognitive dissonance may actually help reinforce a belief: Thus, the Chinese governments' efforts are likely to boomerang and backfire in the long-run even though they may achieve limited success in the short-term. This field in still in its infancy, but alternatives to organized religion have been proposed by intellectual Sam Harris and Dalai Lama. Holistic moral and spiritual education may be one way to expand people's horizons and this approach is much more likely to succeed where others have failed. According to British Activist Maajid Usman Nawaz, Muslims, including those growing up in the UK, lack an alternative world view on spiritual matters, which is the key, and as a result, fall prey to Islamists. Nobel Laureate Malala Yousufzai has likewise stressed the need for alternative role models for Muslims youth, which if properly analyzed translates to our concept of mindspace. [42] [43] [44]

The components of Minsdpace in a given culture or a group of individuals must be systematically assessed first. This may be done though the adoption of suitable techniques such as Thematic Apperception tests and Inkblot tests. This can be the starting point or remediation, as alternative perspectives can be provided to students. It may also be possible to get rid of undesirable aspects of the education system in the long term though suitably designed education system. Thus, education alone is no magic wand. A suitably designed education system is the key.

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[42] *The Selfish Gene*. Richard Dawkins Oxford: *Oxford University Press*. 1976. *ISBN 0-19-286092-5*.

[43] Beyond Religion: Ethics for a whole world: Houghton Mifflin Harcourt, Boston New York 2011

[44] Waking Up: A Guide to Spirituality Without Religion By Sam Harris Simon and Schuster Paperbacks, 2014

- *List of theoretical Eureka points and Mini Eureka points*

S.No	Course	Lacunae	Name of Eureka Point/ Mini-Eureka point	Potential Downstream implications	Criteria for testing and long-term observation
1	History of India	Quasi-mythological views of history reign supreme	Introduce scientific views of history geared towards consensus building (as opposed to the Marxist approach of polarization and perpetuating ignorance and chaos)	Change in mind-orientation and societal orientation	
2	History of the World	Religious-inspired views on the origin of religion reign supreme	Teach scientific views on the origin of religion as opposed to religious-inspired constructs or ideologically-driven discrimination such as Marxist approaches	-do-	
3	Science	Superstitions galore	Teach the origins of superstition	-do-	
4	Social studies	Drug-taking is ubiquitous	Classes on Mind-orientation, societal orientation and personality development	-do-	
5	History of India	Society is overly past-oriented	Appropriately redesigned approaches to history teaching and the teaching of other cultures.	-do-	

An alternative approach may to identify all social problems upfront and identify Eureka points, mini Eureka points and other remediation strategies as this may prove to be a more efficacious approach. Most of these will involve cultural remediation through awareness creation and the presentation of alternative scientific perspectives.

1. Future of religion and fighting religious dogma

Understanding the role of religion in society is crucial for the healthy progress of society, but there can be no quick fixes and magic bullets. Education will undoubtedly play a crucial role in determining the role of religion in society, and the Anthropologist with his knowledge of religion, society and other aspects of man, can play a major part in determining this role. This has however been barely exploited, and society is yet to be freed from the clutches of the more unwholesome aspects of religion. We blame it wholly on absence of proper perspectives and methodology. From our perspective, a religion may also be construed as an ideology.

Cults and ideologies are also informal or semi-formal institutions forming an inalienable part of society; they may hold varying degrees of sway which may increase or decrease with the passage of time. An institution may be defined as "An established form or condition of procedure characteristic of group activity." (McIver and Page). According to H.E Barnes, "Institutions represent the social structure and the machinery through which human society organizes, directs and executes the multifarious activities required to serve human needs." The chief characteristics of institutions are their varying degrees of dominance in societies, presence of standardized procedures or norms, presence of controlling mechanism to control society or its members, relative permanence, abstraction, and presence of symbolic traits.

The word "Ideology" owes its existence to the French word "idéologie" which was believed to have been coined at the time of the French Revolution, when it was introduced by a philosopher, A.-L.-C. Destutt de Tracy, as an abbreviation for the "science of ideas". To put it crudely, it may be referred to a collection of beliefs that are usually not fully tested or lack universal applicability or acceptance. These also generally conflict with the idea of value-neutrality. Ideologies archetypally possess paradoxes both internal and external that tend to pre-empt their demise and bring them in conflict with the world at large.

David W. Minar describes six different ways in which the word "ideology" has been used in different periods in time, these being: [45]

- As a collection of ideas with rigid content, usually normative, prescriptive and non-changing;
- As the form or internal logical structure that ideas have within a set and may not be compatible with external principles;
- By the role in which ideas play in human-social interaction;
- By the role that ideas play in the structure of an organization without currency outside the organization;
- As meaning, whose purpose is persuasion; and
- As the locus of social interaction.

According to Willard A. Mullins an ideology is composed of four basic characteristics:[46]

- It must have power over cognition and must seek to control or influence individuals
- It must be capable of guiding and altering one's evaluations and patterns of thinking
- It must provide guidance towards action or goad people towards committing actions; and
- It must be comprised of logically coherent beliefs that hold within an entity.

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[45]Ideology and Political Behavior David M. Minar Midwest Journal of Political Science Vol. 5, No. 4 (Nov., 1961), pp. 317-331

[46]On the Concept of Ideology in Political Science Willard A. Mullins American Political Science review June 1972

Terry Eagleton provides further definitions of ideology as follows:[47]

1. A body of ideas characteristic of a particular social group or class;
2. Ideas which help to legitimate a dominant political power;
3. False ideas which help to legitimate a dominant political power;
4. Systematically distorted communication;
5. That which offers a position for a subject;
6. Forms of thought motivated by social interests;
7. Identity thinking;
8. Socially necessary illusion;
9. The conjuncture of discourse and power;
10. The medium in which conscious social actors make sense of their world;
11. Action-oriented sets of beliefs;
12. The confusion of linguistic and phenomenal reality;
13. Semiotic closure;
14. The indispensable medium in which individuals live out their relations to a social structure;
15. The process whereby social life is converted to a natural reality.

A thought world, on the other hand, may be defined as the world as seen in terms of the attitudes, belief systems, assumptions etc. of a given society or people. In this context, Bennett and Bennett (2004) distinguish between an objective culture, which refers to the institutional aspects of any culture and a subjective culture which focuses on the worldview of a society's people, and influences a thought world.

Ideology and cultural change are inseparably interlinked, and many theories have been developed to explain the interrelationship between the two. Ideologies may slow down the pace of sociocultural change somewhat, and may act as impediments to paradigm attitudinal shifts. There are also many theories to explain institutional change. (From our perspective, an Ideology may also be defined as an institution)

On the other hand, religion may be defined as a system advocating or necessitating the belief in and worship of a superhuman entity known as a God. Some religions however do not encompass the idea of God, and some others may condone or endorse agnosticism and atheism. A religion may also be defined as a structured system of faith or worship or an institutionalized system of religious attitudes, beliefs and practices. According to Durkheim, "A religion is a unified system of beliefs and practices relative to sacred things, uniting into a single, moral community all those who adhere to those beliefs and practices." The chief defining features of a religion are beliefs in supernatural beings, sacred places, objects or times, mandating or recommending prayer, worship or rituals, prescription of moral codes, defining norms for conformity and an attempt to alter reality or create an alternative worldview for its practitioners. The world's leading religions include Christianity, Islam, Hinduism, Buddhism, Jainism etc. [48]

Some functionalists and structuralists emphasize the positive aspects of a religion such as its ability to maintain harmony and serve the needs of society. However, some conflict theorists believe that religion promotes disharmony, inequality and is not in the interests of society as a whole.

In our view, religion is a type of ideology, and an ideology is a type of mostly formal or semi-formal institution. The most popular and commonly cited definition of an institution is the one provided by Douglass

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[47]Ideology An Introduction Terry Eagleton Verso 1991
[48] Religion and Science: Historical and contemporary issues Ian G. Barbour HarperOne, 1997

North. According to him, "Institutions are the rules of the game in a society, or more formally, are the humanly devised constraints that shape human interaction along with their enforcement arrangements." (North, 1990: 3). "Institutions reduce uncertainty by providing a structure to everyday life and include both formal rules such as laws and constitutions, and informal constraints such as conventions and norms." (North, 1990:4)   Most other sociologists view institutions as a set of formal or semi-formal rules which seek to govern various aspects of society, and which are essentially devised by humans for their own benefit or application.

However, religion has been associated with many unintended consequences. Many crimes have been committed in the name of religion. Adherents of what are believed to be relatively benign faiths like Christianity cannot be exonerated from guilt either, having orchestrated the Crusades from the eleventh to the thirteenth centuries and the Spanish Inquisition. Some religions may have fared worse still. Many thinkers now believe that organizations like the ISIS, the Al-Qaida and the Boko Haram are by-products of the more undesirable consequences of religion, and that religious ideas and ideals play a major role in shaping an individual's thoughts.

The following are the list of attitudes of people towards various issues in three Islamic countries, according to a book by Ayaan Hirsi Ali. These countries were chosen because of the tendency of their citizens to migrate to the United States and other Western countries: [49]

Percentage of Muslims who....	Pakistan	Bangladesh	Iraq
Favour the death penalty for leaving Islam	75	43	41
Say it's necessary to believe in God to be moral	85	89	91
Agree that converting others is a religious duty	85	69	66
Say Sharia is the revealed word of God	81	65	69
Say religious leaders should have some or large influence	54	69	57
Say Western entertainment hurts morality	88	75	75
Say polygamy is morally acceptable	37	32	46
Say honour killings are never justified when female committed the offense	45	34	22
Say suicide bombing in defense of Islam is often or sometimes justified	13	26	7
Say a wife should be able to divorce her husband	26	62	14
Say they would be very/somewhat comfortable with their daughter marrying a Christian	3	10	4

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[49] Heretic: Why Islam needs a reformation now Ayaan Hirsi Ali, Harper Collins, 2015

Attitudes in Pakistan towards the Al Qaida and the ISIS have also been less than ideal, many educated people, including highly educated people have had a penchant for supporting or condoning the nefarious activities of terrorist organizations.

Studies from a 2009 Gallup poll showed that some 15% of Pakistanis believed that the Taliban had a positive effect on the region, and popular public support for terrorism and terrorist activities had increased somewhat over the years. According to a Global Attitudes survey conducted by Pew research centre in 2014 among Muslims, upto 47% of respondents in Bangladesh, 24% in Egypt, and 13% in Senegal and Turkey justified suicide bombings against civilian targets in order to defend Islam from its enemies. The figure appears to have varied widely from country to country, and the figure was lower than 5% in Tunisia. Islamic Intellectuals have often toed the dogmatic line, and those belonging to this category of individuals include Anjem Choudary, Dr Zakir Naik, Ismail Ibn Musa Menk, all these individuals were imparted a secular, western style education. Most of these have expressed views that are opposed to multiculturalism to varying degrees, and most could argue that they are at odds with modern or ideal values.

These views are potentially dangerous given the violence Islam and other religions have been associated with. According to the website the Religion of Peace, Islamic terrorists carried out 33489 terror attacks since 9/11, and according to them Islamic terrorists carried out 176 terror attacks in June 2018 alone, killing 1177 people and injuring 877. Imagine all this in an age that prides itself in its modern values and stellar progress in science and technology.

While Hindus are known to be less violent, attitudes among Hindus towards Hindutva and Hindutva misrepresentation of history leave a lot to be desired. A cursory glance at popular social media would reveal the following very interesting but disturbing characteristics:

- Politics and winning political battles are more important than factual accuracy
- Mythology is more important than the pursuit of historical facts
- Self-glorification and false ethic pride are much more important than the quest for facts
- Pre-occupation with religion even among those who have been imparted a supposedly modern education. This is the bane of people in Islamic and other countries as well.

We strongly believe that such data must be the starting point for cultural remediation.

We believe that several unhealthy trends have played out in the past, with less than ideal ramifications, and examples of these are below. These may have been driven by careerism and frog-in-the-well attitudes of people in different parts of the world:

- An ideology-driven distaste for religion in some parts of the world, examples of which include former communist countries. In such societies, religion was viewed as an opium of the masses, the heartless world, and the sigh of an oppressed creature, and something that had to be got rid of at the quickest.
- A naive assumption that religion could be wished away with a magic wand or brushed under the carpet. Such predictions, not surprisingly, never came to pass, and religious dogma is stronger than ever before despite advances in science, technology and communication.
- Old-fashioned Atheism or the denial of the idea of God without satisfactorily defining the term: Not understanding why people take recourse to religion. This may have indeed increased polarization, and worked in favour of religion.

- A glorification of religion in some quarters. Professors in Western Universities have adopted an uncritical view of Islam and other religions arising from vested interests. They may have actually taken advantage of the absence of a sound theoretical framework here.
- Allowing old Eurocentric biases and prejudices to continue even after these have become obsolete. While all religions must be evaluated scientifically from time to time, outdated views on the "Hindoo religion" for example, may be passé.
- Reliance on outdated models such as Marxist views on different religions: such paradigms have promoted flawed, erroneous comparisons of religions based on a comparison of an incomplete set of parameters or attributes.

We had classified approaches towards religion into the following three categories:

- The religious fundamentalists approach or an ideologically-driven discrimination between religions. Those who adopt an ideologically-driven discrimination between religions may not admit to doing so; this approach may be followed not just by religious fundamentalists, they may be followed by Marxists scholars and other ideologues. The ill-effects of such bias or prejudice from the point of view of scholarship may also be documented along with its ill-effects on science, scientific endeavour, and the counter-reactions it is likely to produce.
- The secularists approach: This is a well-intentioned, if somewhat naïve approach to religion. It assumes, and in most cases, wholly in good faith, that all faiths, religions, doctrines and ideologies are equal and ought to be respected equally. A key aspect of this approach is to ensure that sentiments of different religious groups are not hurt. Such approaches may work well in the short to medium term and help establish a modicum of communal harmony. However, this approach fails to take into amount the fact that all religions are not equal and different religions contain differing amounts of good and bad. It does not seek to eliminate the ill-effects of religion from society. This is notwithstanding the fact that there have been many efforts to reform religion in the past, many of which have met with a reasonable quantum of success. A key reason for adopting the aforesaid approach in earlier times was perhaps to maintain a semblance of communal harmony, and the fact that a critical analysis of religion may have been beyond the capability or purview of local historians in various societies.
- The critical analysis approach: The critical analysis approach calls for a critical analysis of all religions against the backdrop of the twenty-first century and encourages new areas of hermeneutical study devoid of any religious or ideological underpinnings. This paper suggests that this would be the way forward, and must ideally be carried out as subtly and effectively as possible without offending the feelings of any community. All religions and religious dogmas are unequal; not acknowledging this would be fallacious. Equating Islam and Jainism or Hinduism and Christianity for example, would be an exercise in futility as these are all very different ideologies or philosophies which originated under different circumstances or were shaped by different forces at different points in time, or may contain different philosophies that are either compatible or incompatible with modern notions of civility and decorum. This must not be construed as quixotism; it is, the crying need of the day. This is a process that may take several decades, but it must be initiated nonetheless, and scholars would be well-advised to tread cautiously, and set in motion a process that would eventually mitigate the ill-effects of religions.

This kind of a study must be carried out by Anthropologists, though it is as such well outside the scope and purview of this paper. The results of such studies, if carried out will provide crucial and critical inputs that may trigger useful course corrections to the education system.

Sociology of religion may be defined the study of the beliefs, practices and forms of religion using the tools and methods of of sociology. This may include quantitative methods such as surveys, polls, and census

data, and qualitative approaches such as participant observation, interviewing, questionnaires and historical analysis. This kind of study may take on many forms. For example, Karl Marx and Max Weber emphasized the relationship between religion and the economic or social structure of society. While the objectives of this field of study may appear to be at variance with our objectives, the scope of this field can be readily extended to cover more areas to suit our requirements, and such findings ploughed into educational reform.

Another related field is the psychology of religion and this field of study comprises the application of psychological methods and interpretive techniques to a study of religious traditions and their impact of the human psyche. This field of study also includes determining the consequences of religious attitudes and conduct, both for the individual and for society at large, and to identify why religion appeals to individuals. This can naturally form the basis for the formulation of alternative frameworks in the future. The Anthropologist can naturally contribute greatly here, but from the purpose of an Anthropological educationalist, only the results of such fields of study must be closely followed to study the scope for improvement of education systems.

Other novel areas of study can be pursued to their logical conclusion, and these may include a hermeneutical criticism of texts from the perspective of Twenty-first century mores and ethical standards. These may, when and if they are introduced in schools, trigger a critical inquiry of sacralised texts. "But where are those Twenty-first century standards?" we may ask.

Such aspects should go a long way in curtailing or moderating the undesirable aspects of religion on society, and prove to be a remedy to religious dogma. There are other raging debates in society, and these include the role of religious education in schools, whether religious education should be included at all, whether a study of other religions should be included, whether criticism of religions should be included, and whether only moral studies should be included.

2. Assessing students learning capacity

The curriculum must naturally be aligned with the biological learning capacity and maturity of individuals, and the Anthropology with his knowledge of physical and cultural anthropology is well-poised to make this assessment. The idea of physical anthropology is fairly old and can be traced to the endeavours of Carl Linnaeus, Johann Friedrich Blumenbach and Anders Retzius. The field reached greater heights under Paul Broca and Earnest A Hooton. According to scientists, the changes that take place in an individual since birth may be divided into two types, namely quantitative and qualitative. Quantitative changes are those changes that pertain to physical dimensions such as height, weight, strength etc and may be referred to as growth. Qualitative changes are those changes which deal with increase in cognitive ability, mental maturity and development etc. The human lifespan has been divided into infancy (Birth to two years), pre-childhood (3 years to 7 years), later childhood (7 years to 12 years), adolescence (13 years to 19 years), adulthood (20 years to 60 years) and old age. Most psychologists believe that learning occurs throughout the lifespan of the individual, but learning may be more effective in the earlier stages of life.

Charles Darwin, the man who developed the Theory of Evolution, was among the earliest scientists to study the developmental process of human beings, when in 1877, he published notes on his son's cognitive and emotional development in the British journal "Mind". Different theories have subsequently been developed to explain different stages in learning. According to the mechanistic model of development proposed by John Locke, people are merely machines that react to environmental input and predictable response to stimuli.

According to the organismic model of development, people were active, growing organisms that set their own development in motion. (Pepper, 1942) [50]

Leading theories have included Eric Erickson's theories of Psycho-social development (proposes Eight stages from infancy to death (Five before the age of eighteen, and three thereafter) in which each stage builds on the successful completion of earlier stages- This is known as the lifespan perspective and the epigenetic principle), Lawrence Kohlberg's Theory of Moral Development (Which include six identifiable developmental stages grouped into pre-conventional, conventional and post-conventional levels), Sigmund Freud's theory of psychoanalytical development which views development as being shaped by unconscious forces that motivate human behaviour (This includes the Oral Stage (0-1 year), Anal Stage (1-3 years), Phallic Stage (3 to 5 or 6 years), Latency Stage (5 or 6 to puberty), Genital Stage (puberty to adult)), Jean Piaget's Theory of Cognitive Development which proposed four stages of cognitive development i.e. the sensorimotor stage, preoperational stage, concrete operational stage and formal operational stage and Russian psychologist Lev Vygotsky's sociocultural theory of human learning which views learning as a social process arising from social interaction and the origin of human intelligence in society or culture. Most of these theories tend to divide the human lifespan into various stages and define the learning attributes for each.

Behaviourists, such as John Broadus Watson, Ivan Pavlov, Edward Thorndike, Arthur W. Staats and B.F. Skinner, believed that learning occurs chiefly through complex processes of association and reinforcement, and focused primarily on the mechanics of learning. These principles were mainly derived from tests on humans and animals. According to the Social Learning theory or Social Cognitive theory developed by the Canadian psychologist Albert Bandura, the impetus for learning emanates chiefly from the individual through modeling or observational learning. The information processing approach is a relatively newer framework which explains cognitive development by analyzing the processes involved in perceiving and handling information. The Cognitive Neuroscience Approach argues that accurate understanding of cognitive and emotional functioning must be related to what happens in the brain. This process explains how cognitive growth occurs as the brain interacts with the environment. (Gazzaniga, 2000; Humphreys, 2000; Posner & DiGirolamo, 2000). Another perspective to cognitive development is the Contextual perspective. According to Urie Bronfenbrenner's Bio-ecological theory, a range of interacting influences impact a developing person, and ecological influences either promote or stifle a person's growth. This theory posits that development occurs through a complex process of interaction between a person and his environment. [51]

There have been other theories too; Konrad Lorenz (Lorenz, 1957), an Austrian Zoologist, in a study of ducklings, proposed the idea of critical periods, where events could leave a lifelong impression; this is based on the hypothesis that the nervous system is responsive to stimuli at specific ages. Paul B. Baltes and his colleagues proposed a life-span developmental approach- development was lifelong, but the relative influences of biology and culture shifted. Per his model, development was greatly impacted by cultural and historical contexts.

Studies have also endorsed the importance of timing in language acquisition. According to studies by Wilder Penfield, Lamar Roberts and later, Eric Lenneberg (Lenneberg, 1969), there is a critical period for language acquisition beginning in early infancy and ending around puberty. Language acquisition after this

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[50] Encyclopedia of Education and Human Development By Stephen J. Farenga

[51] Human Development Ninth Edition Diane E. Papalia, Sally Wendkos Olds, Ruth Duskin Feldman, McGraw Hill Education (India) Pvt Limited, 2004

point would be relatively difficult. This hypothesis has been reinforced by many cases studies around the world, often conducted in a wide variety of situations, yet most planners fail to take this into account.

The theory has also been extended to identify possible critical periods for second language acquisition (SLA). However, results of this study are mostly inconclusive. In most cases, older learners of a second language do not achieve the fluency that younger learners of the language are likely to achieve.

3. Differentiated learning across dimensions

Differentiated learning refers to the process of tailoring learning to meet individual needs. Differentiated learning techniques can greatly contribute to the efficacy of learning in a wide variety of circumstances. Differentiated learning, we believe, must be designed taking into account all the principles of this paper. The idea of differentiated learning already exists, and is fairly old. For example, special educational programs have always existed for people with disabilities, both physical and mental. The idea of adult education is also fairly old, and has been implemented fairly successfully in countries with low literacy rates. Differentiated programs also exist for people with unique talents and abilities, and also for people with disabilities. Differentiated programs have also been successfully implemented on the basis of gender.

However, this approach has had its own inadequacies. For example, very little has been done by way of culture-specific approaches. Research on the learning needs of people in developing countries is non-existent, and this may in large part due to the myopic tendencies and cultural dispositions of its planners. Also, educational models have been Western centric since the dawn of the Industrial age, and attempts to replace them with indigenous education systems have utterly failed due to the inability of planners to gauge the larger picture. For example, Indocentrism (or even Sinocentrism or Afrocentrism for that matter) can never be a replacement for Eurocentrism. This holds good not just for Indology, but for all other fields of science as well. That is why we advocate inductive and grounds-up nomothetic approaches. Allowing regressive indigenous models to replace old Eurocentric models would not just be a sheer exercise in futility. It would be disastrous, and woolly-headed politicians are ill-prepared to even understand how it is bound to impact them in the long-term. In India, Mahatma Gandhi is celebrated as the Father of the Nation. Yet, by seeking to replace Western education systems, by what he believed was a home grown system for his children, he practically ruined their lives. None suffered more than his eldest son Harilal Gandhi who was made an unfortunate guinea pig, and ended up as a destitute. Instead of imbibing the best features of both worlds, he imbibed, we could argue, the worst of both. Hindutva groups and Dravidian nationalists, we could reliably argue, and not far behind in such endeavours; changes would necessitate the creation of a robust theoretical framework, naturally accompanied by a change in mindset. The latter can evolve from the former, but going by experience may not be easy.

Very little has also been done to analyze preferences by socio-economic groups particularly in developing countries which have proven to be intellectual laggards. More influential countries like India have increased their clout in Western universities, but little has been done to promote the well-being of less fortunate people in those countries. In India, the situation is far more complex and different from that of the USA. Barriers have always existed in terms of caste and economic opportunity there, and economic barriers there have proven to be steep. There is however more to come; ideological barriers there are well-entrenched among dyed-in-the-wool nationalists and those espousing linguistic and religious ideologies. Thus, we have not one ideology, but many. To add to the complexity, the language of choice in trade and commerce here is not one that most people in the region could be expected to be familiar with. This perpetuates differences under the current situation, but this may not necessarily be so. Attempts can indeed be made to tweak course contents for the underprivileged by focusing on the skills they need more – and to focus on skills they would not normally be expected to receive at home. Differentiated approaches to language learning and a greater focus of skills-based training and vocational training may be in order. One approach to this issue may be to develop competency buckets, and assign

individuals or groups to these competency buckets such that root cause analyses and remedial action programs may be developed for each. Alternatively, learning outcomes may be evaluated by socioeconomic group, and metrics may be tracked for each in the long-term. This is akin to the GINI co-efficient in economics.

Some of this has already been enforced in India, but in a rather adhoc fashion. The choice of three boards is usually available to students in India (which includes two centrally affiliated boards and a state board), and is also a choice of language as a medium of instruction– usually English or the language of the state. In some cases, the mother tongue or Hindi is also available as a medium of instruction. Vocational training is also now available, as is also skill-based training. However, very little has been done to conceptualize theory. Very little has also been done bridge the unnatural chasm in quality between government and private schools, and ensure that a semblance of equality of opportunity is achieved. Very little has been done to democratize education by bridging unnatural gaps in achievement across socio-economic groups.

The fallout of this is the lack of uniformity across Indian states and a robust model for others to follow. The author had conducted an Ethnographic survey years ago. The state of West Bengal fared the worst in English skills with little demonstrability of an upward trend. Students educated in the city of Kolkata did not know the meaning of the English word 'to sit' after completing tenth grade. Moreover, they appeared to have been brainwashed and had once even believed that English would not be useful for them. It is only now that the realization is beginning to dawn on them that they were misled all along.

Culture-specific learning models are also non-existent, particularly those that take Culture specific mind-orientations into account. Aspects like a culture's history, past traditions of learning and socio-economic backgrounds of a vast majority of people must be taken into account. In specific contexts, learning proclivities by class and caste must also be kept in mind. Employment patterns of the culture must also be a determinant while designing the education system but sufficient flexibility may be retained as increasingly complex societies may exhibit a diversification of mind-orientations. Sadly, we have not got past a one-size fits all model which is applied both across and within societies.

4. Studying aberrant behaviour and achieving a healthy mind-orientation

The Anthropologist is well-poised to carry out studies on aspects such as school violence, substance abuse and other kinds of aberrant behaviour as he can propose remedial actions and course-corrections for the above kinds of behaviour.

Violence in schools is now a serious problem in many parts of America, and school violence now comprises of arson, shooting, and murder, in addition to trivial kinds of misdemeanour, breach of rules and the increasing menace of drug and substance abuse. In addition to the loss of lives, this kind of violence vitiates the learning atmosphere and results in poor learning outcomes.

Many types of preventive and corrective measures have been proposed to remedy the situation, and examples of this are student conduct or discipline codes which are guides for students on how to behave in school, and this is often accompanied by a punishment system. These schemes have now become so common that students have become immune to them and flout norms with immunity. School authorities are now beginning to explore new ways to address this problem.

Among the most common methods being adopted to stem school violence are education-based methods, which are about dissemination information and choice of appropriate counselling and educational techniques. Another technique being adopted is a root cause analysis and the common causes of such deviant and aberrant behaviour include bad parenting, childhood abuse and social discrimination.

Another method being increasingly adopted by various is reaching out to parents and families of students. Examples of these are Parent-Teacher Associations, where school administrators discuss issues with the students' parents or legal guardians.

The theory of mind-orientation, we believe is one way of assessing orientation of individuals in society. Mind-orientation refers not only to the thoughts, beliefs and values a person fills up his mind with, but also how he acts upon them to orient his attitudes in life. These will ultimately affect his actions, and his direction and purpose in life. We believe mind-orientation is shaped largely by (a) parenting and upbringing (b) peer-pressure (c) education and schooling (d) The effects of the multi-media (e) societal constraints and restrictions including a multitude of factors such as language, religion, cults and ideologies (f) Socio-economic status. In the above scenario, parenting and upbringing, peer-pressure, education and schooling etc, are much stronger influences than say, the multimedia, and these begin at a much earlier age, to boot. Factors such as parenting and upbringing, peer-pressure, education and schooling etc, are also determined by the values and attributes of religious, linguistic and cultural or social groups which will in turn impact parenting, peer-pressure and other factors impacting mind-orientation. Thus, exhibited behaviour and behavioural characteristics can often be a starting point for assessing mind-orientation and a roadmap for achieving healthy mind-orientations.

We had also introduced the concept of 'mindspace' in an earlier paper, and we believe this is a simple but effective tool. The idea of 'mindspace' originates from the fact that every individual has limited time at his disposal, or limited mental bandwidth to focus on multitudinous issues. He can at best devote his time and attention to a limited number of activities. Thus, if he spends an inordinate amount of time on a particular activity, this automatically reduces the time available for other activities. For example, if an individual spends more time watching television, this automatically reduces the time that he has for reading. Thus, the popularization of television has adversely impacted reading habits. Let us consider another example. The advent of the internet has similarly led to the decline of television or cinema as a mode of entertainment. It has also led to the decline of reading for pleasure, but has boosted access and availability of information. Thus, the internet and the television have led to a general decline in people's reading skills in any given language. However, this may have boosted the demand for basic, functional skills in English and the popularization of many technical words among large sections of the population in India. On the other hand, knowledge of words pertaining to art, literature and poetry may have actually declined. Similarly the interest or the ability to obtain profound knowledge on any topic through a serious study of original material may have been severely compromised. Thus, the advent of technology may always not be for the betterment of society. It may even induce a shift from productive avocations and pastimes to less productive avocations and pastimes. This may impact a wide variety of domains such as linguistic skills, learning ability and consequently, even self-confidence or attitudes towards life.

However, the popularity of the internet has brought about several attendant benefits. For example, it may have led to greater access to knowledge, generated an interest in different fields of study, reduce the aspiration deficit among some social groups, and propel them to greater heights. It may not even be too far-fetched to claim that the rise of the internet has reduced tobacco and alcohol, not just by making them aware of the dangers associated with them but also by giving them a positive orientation in life. Last but not the least, it may have allowed more and more people to reap the benefits arising from the wide dissemination of knowledge and has destroyed social barriers. It has truly become a great social leveller.

 This approach may also be used, with some degree of success in moulding personality, achieving healthy mind-orientations, strategizing in response to realities on the ground or helping students make career decisions.

5. *Enculturation, Acculturation and Cultural Competence*

Enculturation is the process by which people learn the workings of their culture and acquire the values and norms pertaining to that culture. Enculturation is usually a natural process and involves parental initiation, and interaction with teachers and peers. If successful, enculturation results in competence in the language, values, and rituals of the culture. This is good old-fashioned acculturation. These days, children are bombarded with a variety of cultural influences from a very young age. This provides them with a more enriching experience, but also subjects them to cognitive dissonance which can be disastrous if not channelized. This can be in "in situ" situations, and in "non in situ" situations, and can be complex indeed.

Another related and interesting concept is Acculturation. Acculturation is the process of cultural change that results from interaction between cultures. The effects of acculturation can be seen in both the original or native and adopted or host cultures, and we had referred to as symbiosis. Acculturation once resulted due to dominance over another's culture through either military or political conquest. These days, acculturation occurs primarily due to economic interaction or human migrations, and we had discussed the process of global cultural change in detail in two papers. As perfect as this may seem, this still allows this less desirable aspects of more dominate cultures to propagate; it is foolish to assume or imagine that allowing things to take their own course will lead to a utopia.

Intercultural competence encompasses a range of skills that lead to communicate effectively and appropriately with people of other cultures, and leads to greater success in the school and the workplace. Appropriate intercultural communication includes behaviors that suit the expectations of a specific culture, or a broader global culture. These are also areas where a Cultural Anthropologist would be expected to play a crucial role as his incorporates his knowledge and learnings, and his study and knowledge of learning styles, for example, into the course content.

6. *To educate people on threats to civilization*

Another key function of an Anthropological Pedagogist is to identify and be up-to-date with what are perceived to be threats to civilization from time to time, and ensure that these are included or updated in the syllabus in keeping with the philosophy of 'neo-centrism' or the long-term welfare of humanity and the neutralization of perspectives. This is likely to lead to a heightened awareness of the problems facing humanity by allowing for freer exchange of perspectives, and this is likely to precipitate action and a hunt for solutions. Examples to commonly perceived threats to civilization are given below:

- *Global warming*

Global warming or climate change as it is sometimes called, is the claimed increase in the average temperature on Earth due to manmade activities. This kind of global warming is sometimes referred to as Anthropogenic global warming. Multiple lines of scientific evidence show that the climate system is warming. The rate of increase in global temperatures appears to have accelerated since the 1950's.

In 2013, a report by the Intergovernmental Panel on Climate Change (IPCC) concluded, "It is extremely likely that human influence has been the dominant cause of the observed warming since the mid-20th century." The largest contributor has been the emission of greenhouse gases such as carbon dioxide, methane, and nitrous oxide. It is predicted that in the 21st century, the global surface temperature is likely to rise a further 0.3 to 1.7 °C in the most optimistic scenario, and 2.6 to 4.8 °C in the most pessimistic scenario. These findings have been vetted by most researchers of dispute, and have the widespread of the scientific community. Even though the Industrial revolution began two centuries ago, heightened awareness on global warming dates back only to the past few decades, and concrete action has begun to manifest itself only during the past decade.

In December 2015, officials from nearly two hundred countries met in Paris at the United Nations Climate Change Conference and negotiated an international agreement to limit global warming which was subsequently ratified by them. However, in June 2017, Donald Trump, the president of the USA decided to withdraw from the agreement on the grounds that it would hurt the American economy. Thus, new ideas and scientific discoveries tend to enter mainstream human consciousness very slowly, and ill-founded resistance has proven to be much stronger than anticipated. "What difference will a suitably redesigned education system make?, we may ask.

- *Depletion of Natural resources*

Resource depletion may be defined as the consumption of a resource faster than it can be replenished, or the consumption of resources that cannot be replenished. Thus, Natural resources are classified into renewable resources and non-renewable resources. And conventional developmental models have paid scant attention to sustainability. The term Resource depletion is most commonly used in reference to forestry, mining and extraction of ores, minerals and metals, water usage, and consumption of fossil fuels. Water scarcity may well turn out to be one of the greatest threats to civilization in the Twenty-first century, and was listed by the World Economic Forum in 2015, as the greatest threat of the coming decade. Most people across the world, particularly in developing countries, lack access to safe drinking water, and the per capita availability of water remains an area of concern.

- *War and global conflicts*

Conflicts and wars have been a feature of human societies since time immemorial. A War may be defined as a state of armed conflict between states, societies and informal groups, such as insurgents and militias. It is often characterized by perpetuation of one's own power, aggression, destruction, and death, through the use of military and other tactics. The deadliest conflict till date is believed to have been the Second World War which lasted from 1939 to 1946 and claimed 56.4 million lives. The dangers of war have been greatly multiplied due to an increase in technological prowess and the development of weapons of mass destruction. Nationalism, cyber warfare, ethnic conflicts and religious fanaticism are now posing new threats to world peace. A major source of conflict is differences in ideology and a lack of cultural understanding, and this may be the Achilles heel of many traditional education systems.

- *Religious fanaticism*

Religious fanaticism may be defined as an excessive or an obsessive zeal or enthusiasm pertaining to one's own devotion to a religion, in a manner that usually seeks to downplay the importance of, or marginalize other religions or belief systems. This is a topic of great relevance given the fact that religious fanaticism is on the upswing in different parts of the world, and there have been an average of 13,000 terrorist attacks annually since 2006. Wahabbi, Salafi and other rigid interpretations of Islam have led to the rise of extremist organizations such the ISIS, the Al-Qaeda and the Boko Haram. This may rise from religious beliefs themselves. For example, statements such as "There is no God but Allah" or "Jesus is the only way to heaven" promote intransigent views. This approach naturally breeds fascism, and the application of some principles espoused in this paper may help, along with a generation of awareness among students and learners.

Terrorism has been a fairly old phenomenon - The Sicarii was a Jewish terrorist organization founded in the first century AD with the goal of overthrowing the Romans in the Middle East. According to some scholars, the Kharijites were the first Islamic terrorist's revolt against the authority of the Caliph Ali in the seventh century. However, the ubiquity of modern education systems has apparently done nothing to stem the rot. This may thus be due to a systemic failure and points to a dearth of conceptual frameworks and creative solutions.

- *Family planning and birth control*

While most counties have achieved some success in bringing down Total Fertility rates (The world's Total Fertility Rate has halved in under fifty years, while India's has tumbled from 6 in 1950 to around 2.3 Children per woman today. While this may sound impressive, there have been some calls for pro-natalism of late, and this is an idea that would be at odds with the philosophy of neo-centrism.

7. Integration of pedagogical techniques with the dynamics of language, theories of second language acquisition and sociolinguistics

We had dealt the dynamics of language i.e. how languages spread in a wide variety of circumstances, in earlier papers, and had dealt with the origin of language and diachronic and synchronic linguistics as well, particularly the dynamics of language in multi-lingual societies. These findings were published in two separate papers in 2015 and 2016. [52] In these papers, we had introduced the 'Epochal Polygenesis' approach for the origin of languages, and had discussed the spread of languages in non-contact based scenarios in great detail. We had predicted that non-contact based scenarios would eventually dominate, and the key would be to understand how languages spread in non contact-based scenarios. This would to crucial to assessing the relative important of different contexts and societies, and understanding their role-based usage. Factors such as the complexity of languages and linguistic distance also would play a role in deciding the techniques to be adopted for language teaching.

Various measures have also been proposed to assess the speed and efficacy of second language acquisition, such as the Input hypothesis and monitor model of Stephen Krashen (learners progress in their knowledge of the language when they comprehend language input that is slightly more advanced than their current level), Michael Long's interaction hypothesis (states that the development of language proficiency is promoted by face-to-face interaction and communication), Merrill Swain's output hypothesis (states that learning takes place when a learner encounters a gap in his or her linguistic knowledge of the second language), Richard Smith's noticing hypothesis, Elizabeth Bate's and Brian MacWhinney's competition model (psycholinguistic theory of language acquisition and sentence processing), the model proposed by Chiswick and Miller, and some of these are purely empirical methods. In countries like India, there is a raging debate on whether education should be imparted in the mother tongue on in a more universal language like English. Both approaches have their own merits and demerits, but are not substantiated with metrics.

Another useful field is Sociolinguistics which is the descriptive study of the effect of society, on the way language is used, and society's effect on language. It differs from sociology of language, which focuses on the effect of language on society. Sociolinguistics overlaps considerably with pragmatics which deals with the use of language in society and the context in which it is used. It is historically closely related to linguistic anthropology, and the distinction between the two fields is often blurred.

Sociology of language is the study of the relations between language and society, and was founded by Joshua Fishman and others. It is closely related to the field of sociolinguistics, which focuses on the effect of society on language. Sociology of language studies society in relation to language whereas Sociolinguistics studies language in relation to society. In the Sociology of Language, society is the object of study, whereas, for in Sociolinguistics, language is the object of study. Language ideology or linguistic ideology on the other hand, is a concept used Linguistic anthropology, to describe beliefs or feelings about languages as used in their social contexts. The ethnography of communication or the ethnography of speaking, is the analysis of communication

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[52] Observations on language spread in multi-lingual societies: Lessons learnt from a study of Ancient and Modern India Sujay Rao Mandavilli ELK Asia Pacific Journal of Social Sciences.

within the wider context of the social and cultural practices and beliefs of the members of a particular culture or society.

The Anthropological Pedogogist would be expected to be uptodate with the latest research in these fields, and apply them as application to the field of education and language teaching. The Theory of Linguistic Mindspace should help here, and this should be corroborated with the process of identity formation to understand the process of language acquisition and second language acquisition.

8. *Anthropological Pedagogy and economic models: A bi-directional approach*

It is impossible for any country to achieve sustainable economic development without substantial investment in human capital. Education greatly improves the quality of lives of its citizens and leads to long-term social benefits for individuals and society. Education also plays a major role in the economic development of both developed and developing countries. Over the years, Education has become a very important part of the policy of most governments. Many studies have also been conducted to study the relationship between education and the economic development of a country. However, one limitation of existing approaches is that the impact of different types of educational models, patterns and systems on economic growth is not assessed. There is also no assessment of culture on economic development as this crucial metric needs to be used to make suitable changes to the educational system. The typical patterns of employment also vary widely from region to region, and there has been no attempt to use this information to make suitable changes to the education system while leaving enough leeway for suitable changes in future employment patterns. No attempt has also been made to understand mind-orientations, modal mind-orientations and societal orientations, and to use this information to make suitable changes in the educational system, while again leaving enough room for further changes. Linguistic ability or relative linguistic ability must also be used to determine the direction of a nation's economy subject to other considerations, and this is one of the sacred duties of an Anthropologist. For example, the linguistic proficiency of the Japanese in any of the world's leading lingua francas may be limited, and this would necessitate the adoption of home-grown economic development models mired in reality. Anthropologists may play several additional roles in this regard. An example would be designing the course contents for various vocational courses. Automobile mechanic courses may be offered in Hindi, Bengali and Marathi besides many other Indian languages, while it may be foolish to offer Engineering courses in Hindi or other Indian languages at present.

Developmental Anthropologists have played a crucial link between the world of Anthropology and Economics, and have often sought to work with NGO's and other organizations and government departments to ensure that the fruits of western development were brought to other parts of the world or that development took place in accordance with people's wishes. Developmental Anthropology in its present shape and form owes its origin to the statement of the American President Harry Truman in 1949 that half the world was underdeveloped and needed Western help and has taken off in a major way since the 1970's, as major economic development and affirmative action programs being launched in different parts of the world. However, Anthropological Pedagogy new opens up altogether new vistas for the Anthropologist and may bring new meaning and purspose to his work.

9. *Role in Corporate Anthropology*

The Anthropologist has traditionally played an important role in corporations, particularly multi-national ones. He has played a major role in recruitment and human resource policy, purchase policy, sales and marketing policy besides product design. He can now play an enhanced and a meaningful role in areas such as corporate training and learning programs, particularly in multi-cultural contexts by assessing cultural preferences and apply his prior knowledge of strengths and weaknesses of various educational systems.

10. *Metrics driven approach*

Metrics may be defined as a carefully chosen set of indices that give meaningful or useful information about a particular process or activity. Metrics may also be defined as the science of measuring, or a set of measurements that help people evaluate performance.

Metrics are widely used in the field of education. Examples of metrics that are used include:

- Metrics that deal with Educational inputs, such as student and faculty characteristics
- Metrics that deal with Educational processes knowledge retention and graduation rates
- Metrics that deal with Educational outcomes, such as knowledge of subject matter, reading and writing ability, and critical-thinking proficiencies.
- Other types of indices such as school dropout rate are also assessed.

Metrics are also expected to be used in Anthropological Pedagogy, and are expected to take the measurement of educational outcomes to an altogether new level. Examples of these include:

- School dropout rate among marginalized sections of society
- Differences in learning outcomes across socio-economic groups
- Gender differences and differences by race
- Changes to leaning outcomes over a period in time
- Measurement of Innovation indices in societies and tracing them to the education system
- Data on school violence and substance abuse
- Social Impact Assessments (SIA) of various education systems