

# THE 4<sup>TH</sup> INDUSTRIAL REVOLUTION AND THE ROLE OF POST-INDUSTRIAL UNIVERSITIES

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## Abstract

*This paper examines the role of the 21st century University in developing (i) Synergetics in Society and Academia, (ii) Progressive Democratic System and Socio-Economics, (iii) Education for liberation and fulfillment, (iv) the vision of an ideal model university. Part I of this paper covers Synergetics in Society and Academia; specifically Synergetics in Society, and then Synergetics in Academia. Part II of the paper covers the Foundations of Neo Psychology & Socio-Economics, and Peoples' Democratic Systems (PDS); specifically New Science Paradigm, Socio-Economics based on the New Science Paradigm and PDS). Part III covers Role of Education for Living needs, Liberation, and Fulfillment; specifically, Universal Outlook, Know-how for Living Needs and Psychic Liberation, and Education for progress, liberation, and fulfillment. Finally, Part IV covers Landmarks in Education, from Ancient to Modern Times, specifically, The Gurukula System of Education, Research University Concept, and Universities for Social Transformation: Ideal Modern University. While the power of money in a bourgeois society had been studied by Karl Marx and the influence of capital in entrenching socio-economic class divides has been studied by Thomas Piketty, this paper suggests that universities can play a crucial role in reconstituting the post-capitalist socio-economic order.*

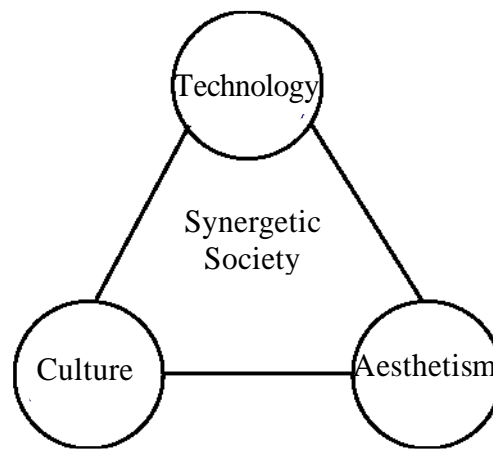
## Part I. Synergetics in Society and Academia

### A. Synergetics in Society

The concept of synergetics is an important aspect of functional effectiveness and harmony, based on integration and balance of the components of a system.

Human existence is trifarious, and synergetic living entails a harmonious blend of the three spheres of existence. Thus, if in a society there is emphasis only on culture and aesthetics, and not on science and technology the standard of living will be low. Conversely, a technocrat society

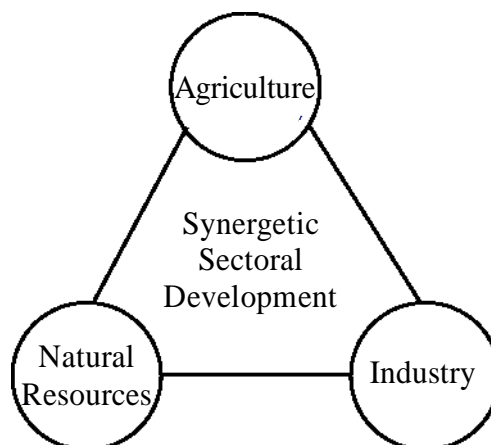
that ignores aesthetic values and erodes culture will be unstable. Thus technology, culture and aesthetism constitute the ingredients (and a balanced triangle) of a synergetic society (**Figure 1**).



**Figure 1:** Synergetic Society constituents. [adopted from 1]

What are the factors needed for socio-**economic development** of a region? They are agriculture, natural resources, and industrial infrastructure to convert the raw materials into finished goods. There is no way that a single country can have all these three factors required for economic development. In fact, industrially developed countries depend a lot on developing countries to supply the raw materials for their industrial development and economic growth, instead of having a cooperative relationship with the developing countries for sharing natural and human resources for their combined economic development.

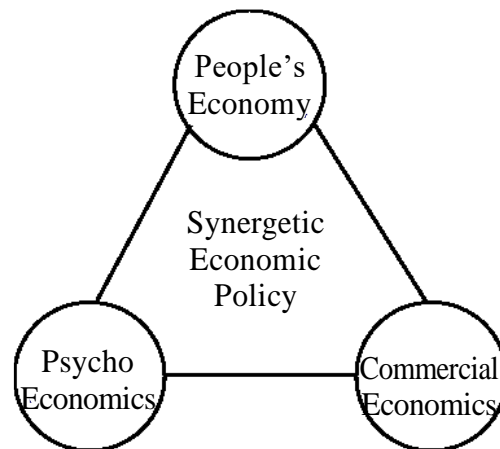
Thus, for economic development and well-being, a group of preferably culturally and economically compatible countries need to come together, to share their agricultural, natural, and industrial resources (**figure 2**), in order to constitute a synergetic socio-economic bloc or region.



**Figure 2:** Synergetic Socio-Economic bloc or region. [adopted from 1]

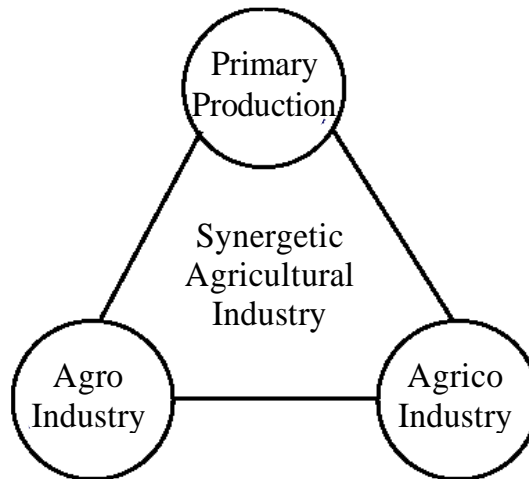
In such a **synergetic socio-economic bloc**, local resources would be utilized maximally through local labor to form an indigenous industrial base. The economic characteristics of such a synergetic socio-economic bloc would be (1) balanced development of agricultural, manufacturing, and service sectors of economy; (2) balance of imported, exported, and locally consumed materials and goods, with an emphasis on indigenous conversion of raw materials into manufactured goods; and (3) industrial, ecological, and cultural homeostasis.

For **development planning**, the balanced triangle of **Economic Policy** is to consist of (a) People's economy dealing with production and supply of minimum essentials of life, (b) Commercial economics, dealing with monetary and trade policies, for maximum utilization and rational distribution of resources, and (c) Psycho economics, to enhance the intellectual and psychic potentialities of people (**Refs 2 and 3**). **Figure 3** illustrates this balanced triangle of Economic Policy.



**Figure 3:** Balanced triangle of Economic Policy. [adopted from 1]

The **agricultural sector** further needs to have balanced development of primary production, agro (or pre-harvest) industry, and agrico or (post-harvest) industry (**figure 4**)



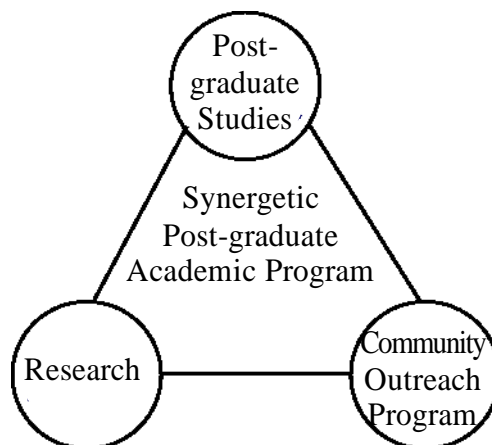
**Figure 4:** Agricultural Sector composition

Finally, these synergetic blocs would in turn come together to form an **socio-economic bloc**, such as an African Economic Federation or South-American Economic Federation. Such an inter-regional cooperation depends upon establishment of economic security and viability at the level of the regional blocs, as portrayed by figure 2. This, in brief, constitutes the basis of “synergetic regional economic development within an economic federation”.

### **B. Synergetics in Academia**

Academic programs need to be synergetic with one another as well as with their applications to the community.

What are the factors of **effectiveness of a post-graduate program**? Research is of course a prime component of a post-graduate program. However, for research to be in turn effective, it has to be related to and influence the community and society. Hence post-graduate studies, research, and community-outreach program all together constitute a synergetic system (**figure 5**).

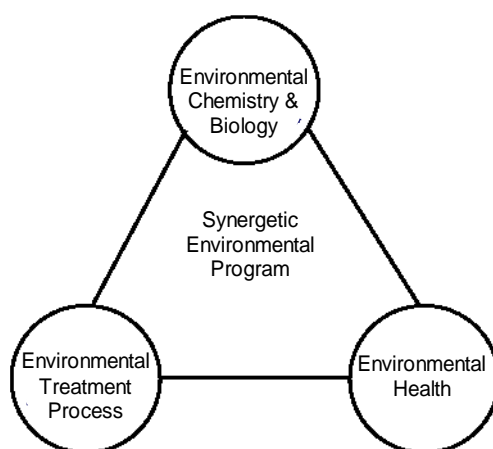


**Figure 7:** Synergetic Post-graduate Program. [1]

### C. Synergetics in Education Programs

Graduate educational programs must necessarily be multi-disciplinarily synergetic. For instance a synergetic **Environmental program** would encompass

- (i) the Faculty of Science, contributing to the study of Environmental chemistry and microbiology,
- (ii) the Faculty of Engineering, contributing to Pollution control and Biological treatment processes,
- (iii) the Faculty of Medicine, contributing to Environmental health, through the disciplines of occupational medicine (involving, among others, toxicology of medical aspects of radiation).



**Figure 6:** Synergetic Environmental Program

A synergetic degree program in **International affairs**, say in the context of multi-regional Economic Federations, could involve, for instance, the faculties of Political science, Economics, and Law, to develop courses and research on the issues of Decentralized regional development and utilization of both material and psychic resources, Intra-and Inter-regional monetary and banking system, Intra- and Inter-Federation trade policy, and a common Jurisprudence structure.

## Part II. Foundations of Neo Psychology & Socio-Economics, and People's Democratic System

### A. Society at Cross-Roads

Science needs to provide for both material and psychic fulfillment. A universal social outlook would make it possible for all people to live in dignity. At the same time, availability of the means for developing and scientifically qualifying higher faculties of mind would rescue society from materialism, enable people to experience transcendental states of the mind, and prevent psychic conflicts and drug abuse. For this purpose, we need:

- (i) the development, acknowledgement, and application of a new Paradigm of Science,

- (ii) a new concept of Psychology, and
- (iii) a new Global Socio-Economic Order.

## **B. New Science Paradigm**

In the last fifty years, the Theory of Relativity (special and general), has altered our views of space and time, while Quantum theory has necessitated a new concept of the nature of matter and energy. Yet even during this period, physicists have started to regard Consciousness as fundamental, and matter to be a derivative of Consciousness. According to them, we cannot get behind Consciousness; everything we talk about, everything that we postulate as existing, requires Consciousness. Matter, it is said, is only an appearance, whereas Consciousness alone is real, and matter is its derivative.

Clearly, the time for propounding a new paradigm of Science is overdue. This new paradigm of Science is to provide a common base for development of physical and life sciences, psychology and medical sciences. This would help develop better understanding of the mind, its disorders and rejuvenation. It would also provide the stimulus of a new outlook on Socio-economics. The concepts presented below, are fundamental to this new Science paradigm (**Refs 4 and 5**).

**The first and foremost postulate** is that Consciousness is the fundamental entity, incorporating the Cognitive and Operative principles. **The second postulate** is that Consciousness is devolving into the Cosmic Mind, and the Cosmic Mind is devolving into matter. How? Through the Operative principle (or *Prakriti*), the Cosmic mind is getting expressed into the five fundamental (ethereal, aerial, luminous, liquid and solid) factors, providing the constituents of the physical universe. These five fundamental factors are understood to be (i) a spectrum of wave forms described as ethereal, aerial, luminous, liquid, and solid factors (in order of decreasing wavelength), and (ii) carrying sensory attributes: sound, touch, light, taste, and smell.

Now the solid factor is acted upon by two types of opposing forces: interial and external forces. If the interial force dominates over the external force, a nucleus is formed within the solid factor, and a physical structure is formed. Further domination of the interial force over the external force results in the conversion of the solid factor into ectoplasmic matter, manifesting a biopsychic field representing a primitive mind. At this stage, the physical structure becomes a primitive life structure. This constitutes the **third important postulate**.

Then, from primitive organism to complex organisms, there is an unfolding of consciousness, with a corresponding increase in psychic dilation of the mind and concomitant increase in complexity of the nervous and anatomical structures. Increasing psychic dilation of the mind leads to intellectual, and eventually to parapsychic and intuitional development. The psychic dilation of

the mind eventually culminates in its merger into Consciousness. This constitutes the **fourth important postulate**.

### **C. Psychology based on the new Science Paradigm**

The human mind can be divided into three layers: that which perceives, that which does the work of perception, and that which gives the feeling of existence. The psychic force on the mind is thought to be caused by its interaction with the environment, and also due to the reactive momenta of the impressions on the mind caused by one's interactions and behavior. These impressions can be likened to a characterizing property of the mind, which dictates the nature of the response to a certain stimulus from the environment. This response creates additional impressions on the mind, and this process goes on continuously.

In daily life, the conscious mind is generally most active in constantly perceiving and taking the shape and form of objects and persons perceived. These impressions provide momentum to the mind in response to ongoing stimuli. This involvement or activity precludes the mind from being receptive to the attractive force of Consciousness. On the other hand, if the *perceiving* portion of the unit mind were to ascribe Consciousness to the object of its perception, and if the *doer* portion of the mind also ascribes the *doer* activity to Consciousness, then the mind does not acquire new impressions. Although mindfulness and mindful behavior has come of age in "western thought", the concepts are eternal truths in vedic philosophy.

In response to its environment, the mind adopts certain inter-and intra-ectoplasmic occupations, such as hatred, fear, anger. These expressed sentiments affect certain mental glands and brain centers, especially if the sentiments get habituated as instincts. Incidentally, these subsidiary glands are also the regulatory sub-stations of organs, whose main controlling station is located in the brain. Hence the organs also get affected by malfunctioning, sentiment-laden glands and brain centers; this is the primary cause of degeneration of the physical body structure (leading to disease) and mind (causing stress and even depression). Now when the mind gets dilated by the ideation of Consciousness, carried out at the site of these glands and the brain centers, these sentimental instincts are also controlled and psychic stress is also eliminated.

In this era of mental (as opposed to physical) involvements and preoccupation, psychic ailments, neurological diseases, and mental depressions are increasing. Just as excessive physical endeavor stresses the corresponding physiological system, so also excessive mental interactions and endeavors stress the portions of the mind that perceive and do the work of perception. The ego associated with the *I exist* portion of the mind is what makes the *doer* portion of the mind perform actions, which can result in painful outcomes.

The mind must always have something to ideate on; namely, it has to have an objectivity. In daily life, the objectification of the mind resulting from harsh interactions and painful situations produces deformations of the mind. At times, these situations persist and the resulting feeling of

helplessness, at not being able to alleviate or cope with the resulting painful deformations of the mind, produces mental ailments.

What is the remedy for these acute and chronic painful states of the mind, resulting from inimical interactions? This pain can be alleviated by the dilation of the mind ideating on Consciousness which, as discussed earlier, is the fundamental constituent of the manifested universe. It is this dilation of the mind that will help to remove its painful deformations caused by harsh interpersonal interactions and tragic situations. Further, not only will the dilated mind thus experience increasingly blissful feelings, but it will also have a greater capacity for multilateral activities. The increasing development of the mind, however, causes newer mental and psychological ailments, resulting from difficulties in coping with the increasing mental complexities. Thus, the mind has to be continually dilated. This is the basis of **psychic therapy** for mental ailments as well as for mental rejuvenation.

#### **D. Socio-Economics based on the New Science Paradigm**

##### **Social Outlook:**

Because of Consciousness being deemed to be the fundamental constituent of matter and mind, all human beings can be considered to be bound together by the common ties of fraternity. Further, the destinies of all human beings are inter-linked. The important idea, from a social viewpoint, is that human society is one and indivisible.

Indeed, throughout history, subscription to and indulgence in narrow divisive sentiments has (i) divided humanity, resulted in wars and bloodshed, (ii) led to colonization and bleeding of wealth from colonies, caused suppression of culture and psycho-economic exploitation. The key to global peace is for all people and all nations to accept and imbibe the universal outlook, and develop public policies based on the concept of *one for all and all for one*.

Also because of the concept of the origin of mind being from the Cosmic mind (from Consciousness), there is an innate tendency for human beings to expand themselves mentally, intellectually, and particularly in the subtler spheres of life. Indeed, microcosms differ from one another in their individual mental flows. Development of the subtler faculties of mind results in a parallelism of individual flows with the Macrocosmic flow, resulting in happiness and fulfillment. The Societal culture must facilitate this expansion, and Science must provide the means for it.

##### **Neo Socio-Economics (Progressive Utilization Theory):**

The role of Science is to provide the know-how for persons to live in physical comfort, as well as to enable them to expand their mind through the development of their parapsychic potentialities. This would require this new **Science paradigm** to be recognized as part of Science culture. The acquisition of parapsychic potentialities should in fact be recognized by the Socio-



Economic system, and this constitutes a significant departure from the present-day materialistic socio-economic systems.

There are invariably many obstacles in the implementation of such a *progressive* outlook, caused by a great majority of the people in the world not having the basic necessities (food, shelter, clothing, healthcare, education), as well as other requisite physical amenities to save time spent in physical chores. This points to the need of a **new Socio-Economic Order**, to enable all human beings to afford the basic necessities of living, to be materialistically comfortable by meriting emoluments commensurate to the significance of their work in society, and to, at the same time, be able to develop their parapsychic potentialities. Let us now delineate the **psychological and socio-economic basis of such a socio-economic system**.

Let us enunciate the **principles of this neo socio-economic order** or this new outlook on Economics (**Ref 2**). The first principle is cosmic ownership, individual trusteeship, rational consumption, and equitable distribution of the physical resources of the universe. The second principle is that, for individual security and societal stability, the minimal necessities of life need to be guaranteed through 100% employment and minimal wage. The third principle is that the remuneration for one's contribution to society be proportional to the importance and value of the contributions.

The fourth principle is that productivity of commodities be proportional to the collective need, and that prices be kept stable; this will help augment the purchasing capacity and standard-of-living. The fifth principle is that the Economic System should foster the development of physical, intellectual, and parapsychic human potentialities as well as their implementation for collective welfare. This Economic system is known as the **Progressive Utilization Theory (PROUT)**.

This Prout economic system will replace the capitalist economic system, and provide a more stable and people-benefitting socio-economic order. In this Socio-Economic order, there will be no justification for stock markets, and banks will not be allowed to gamble with their clients' money.

### **Indigenous Development:**

The basic tenet of local and regional economic development is to cater for the welfare of the local people of the region, through maximizing the socio-economic potentiality of decentralized socio-economic potentiality of decentralized socio-economic blocs, by the local people themselves without being controlled or exploited in the private or public sector domains.

The local residents can ensure maximum development of local resources, by enabling local conversion of locally available raw materials and produces into manufacturing and processed goods. In order to ensure full-employment to the local people, medium-sized industries could be organized as cooperatives.

Therein, production would be based on the consumption demand. Income-tax need not be levied, since the parties most able to pay it avoid doing so, and also to discourage black-money accumulation and circulation. Instead, excise duty could be levied on the non-essential and luxury items, and the capital generated locally ought to be utilized for local development.

In this way, by enabling meeting of basic needs, guaranteeing full employment, keeping prices stable, augmenting the economic development of the region, and increasing salaries proportionally, the purchasing capacity of the people and their living standards would be continually raised.

#### **E. People's Democratic System (PDS):**

Commensurate with this neo socio-economic order there is a need for a people's democratic system, in place of the present-day capitalist and political party based democratic system. In the people's democratic system, there will be no political parties, and the government will comprise of elected members of societal sectors and associations, such as doctors association, lawyers association, farmers association, industrialists association, teachers association, etc (Ref. 6).

Thus, the governing body (say of a city or state) will comprise of members who are directly representing the community sectors (and not their political parties), and will be obliged to enact policies that are in the best interest of their community sector and of the people.

#### **Causes of Present Day Economic and Governance Crisis:**

Now, many supposed democratic countries are becoming bankrupt, why? It is because of the present-day corporations-dominated *capitalistic economic system* and corporations-promoted political-party based democratic system, which are self-interest promoting systems having nothing to do with people's welfare.

In this capitalist political-economic system, there is no scope for promoting the interests of the people. So then, what happens? Firstly, their banks have been allowed to freely gamble with and lose their clients' monies. Secondly, these countries have not concentrated on the development of innovations, and incubation of indigenous industry to convert these innovations into products for consumption and export. Thirdly, they have been importing and spending more than the revenue derivable from their exports; this has resulted in deficit economy, national debt, and bankruptcy.

In fact, these are also the reasons for poor economy of Developing countries. In the case of India, there is (i) added loss of people's resources due to corruption and black-marketeering, (ii) inadequate production of smart human capital by universities, (iii) lack of innovation at

universities, (iv) excessive importing, such as of defense equipment (with embedded corruption)<sup>1</sup>.

### **Part III. Role of Education for Living needs, Liberation, and Fulfillment**

#### **A. Universal Outlook**

All human beings have a common heritage and a common destiny. Yet, the conflicts and struggles in different parts of the world today can be linked to the lack of realization that human society is one and indivisible. This has led to suppression of the cultural and psychic expressions, and socio-economic exploitations within and among nations.

Hence, an important role of Education is to help develop a neohumanistic social outlook, free from the narrow confines of all sorts of groupism, racism, and regionalism. This outlook also emphasizes that the welfare of all living beings is interlinked. All living beings, including plants and animals, have both utilitarian value as well as existential value. A balanced ecological environment is hence necessary for all of them to develop their full potential (Neo-Humanism book, Ref 7).<sup>2</sup>

#### **B. Know-how for Living Needs and Psychic Liberation:**

A prime role of Education is to teach the means for providing the basic living needs, namely natural resources cultivation and food production, housing construction, health-care delivery, production of household amenities, infrastructure of electrical power, water supply, railways and public transport.

However, it does not stop there. Today, majority of the people of the world are suffering from psychic depression due to unfulfilled and misguided psychic propensities. So, the challenge for Science is to develop the means for liberation from one's psychic propensities. What is hence needed is a new Science paradigm (as enunciated earlier) of devolution of Consciousness into universe and primitive mind (and life), and evolution of mind into higher states of consciousness. This emphasizes the need and basis for enabling psychic dilation of the mind and its subordinate psychic plexuses, to gain liberation from the propensities associated with these plexuses. In this way, human beings can progress from materialism to humanism to divinity.

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<sup>1</sup> For a treatise on Socio-Economic Democracy (Ref 6), this link <https://drive.google.com/open?id=0BzOPIHbjWLYtUI93UTNRLTZIUkE> can provide the socio-economic-political framework of the People's Democratic System.

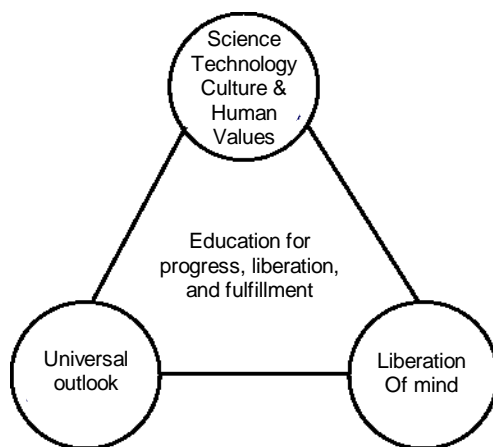
<sup>2</sup> This link [https://drive.google.com/file/d/1wfu\\_rQVVJs8SATv9d8A-EEYvKHKIk7GH/view?usp=sharing](https://drive.google.com/file/d/1wfu_rQVVJs8SATv9d8A-EEYvKHKIk7GH/view?usp=sharing) can provide access to the entire Neo-Humanism book (Ref 7).

### C. Education for progress, liberation, and fulfillment:

The human rights of individuals to dignified living and minimal necessities of living are to be guaranteed. However, we cannot stop here! We need to also guarantee the fulfillment of the intrinsic nature of human beings for unbarred expansion and expression of the mind. So neohumanist educators have the unique opportunity and responsibility to enable (through education) all the people to live in dignity, to fully develop their psychic potentiality, and to facilitate the exalted progress of one another.

To this end, University curricula and research are to incorporate the above delineated roles of Education, so as to help teach and develop (through the academic programs and curricula), science and technology in tandem with human values and universal outlook. The educational emphasis on human values will help guarantee appropriate use of science and technology for human benefit. Inculcating a universal outlook will ensure the cultivation of such public policies, that no community segment in any part of the world is lagging behind physically and psychically.

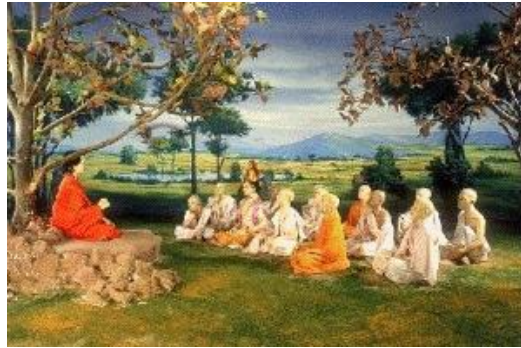
This will, in turn, help to culture a societal environment, which will make it most conducive for people to divert their minds and psychic pabula for realization of Consciousness. This constitutes subjective approach by objective adjustment. The figure below summarizes the synergetic factors of real Education –Education for absolute progress and fulfillment.



**Figure 9:** Education for progress, liberation, and fulfillment

### Part IV: Landmarks in Education, from Ancient to Modern Times

The history of Education and University is the history of teaching and learning. Each generation, since the beginning of human evolution and writing, has sought to pass on cultural and social values, morality and religious (or spiritual) values, economic development and governance, medicine and healthcare, science and technology to the next generation. The totality of all these disciplines constitutes knowledge (Ref 8).



### **I. The Gurukula System of Education**

In the first millennium BC, formal education in Ancient India originated with the Gurukul system. The Gurukula was residential in nature with the shishyas (aspirants of knowledge) associated with the Guru to get enlightened, as part of his extended family. At the Gurukuls, the teacher imparted knowledge of Religion, Scriptures, Philosophy, Literature, Warfare, Statecraft, Medicine, Astrology and History. The students made their guru as their role model. The guru imparted this knowledge to his disciples through his own example. The guru was supposed to be of flawless character, and he imparted the same flawless character to his students through his constant association.

### **II. Research University Concept**

Under the guidance of Wilhelm von Humboldt, a new university was founded in Berlin in 1810, which became the model for a Research University. A Research University, according to the 1994 Carnegie Classification of Institutions of Higher Education, is deemed to engaged in extensive research activity, offers a full range of academic programs, and is committed to providing graduate education through the doctorate

#### **Top Research Universities rankings are based upon:**

1. Quality measures: National Academy membership, prestigious faculty awards, doctorates awarded, postdoctoral appointees, and SAT scores of entering freshmen;
2. Faculty Scholarly Productivity Index: books published, journal publications, citations of journal articles, honors, and awards.

### **III. Universities for Social Transformation (the modern theme for university in society)**

We are living in an era of significant socio-economic-political turmoil, as everyone is taking a critical look at the role of governments in socio-economic security and happiness factor for its people. In this phase, the 'University' takes on a very important role, in taking a leading and constructive role in the social transformations of our times.

Today, universities face significant challenges to their traditional position in society, as contemporary knowledge systems are becoming more distributed and learning ubiquitous. Where does this leave the university - as a historically specialized and privileged place for development and dissemination of knowledge and learning?

This is the challenge facing modern universities all over the world, to make their surrounding regions to become environmentally and socio-economically sustainable, to provide templates for local and regional sustainable peace, and to impart knowledge for enlightenment.

### **Ideal Modern University**

So now by taking into account the concepts and roles of universities from ancient times to present, let us define our concept of an ideal university, as one which:

1. emphasizes heightened values of living: in personal living and in interactions with societal members.
2. imbibes neohumanist ideals in educational programs.
3. promotes the development of society according to the ancient vedic sloka:
4. Samgacchadhvam samvadadhvam: Let us move together, let us sing together;
5. Samvomannamsi janatam: let us come to know our minds together.
6. incorporates the concept of Gurukula, wherein the faculty members are dedicated to foster the holistic development and enlightenment of students, and are role models for students.
7. is a comprehensive research university, having all faculties: humanities and social sciences; physical, biological sciences, and environmental sciences; engineering sciences, biotechnology and pharmaceutical sciences; management: of business corporations and sustainable communities; medicine and health sciences; law and governance; agriculture and forestry; veterinary science and medicine.
8. assumes responsibility for serving the regional community and promoting its social transformation.
9. provides knowledge for holistic progress of students and society.

The role of universities in a post-capitalist society must develop socio-economic benefits beyond capital and hegemony. For this model 21st century university, we are proposing the following comprehensive academic architecture in the spirit of zen, comprehensive and parsimonious:

1. College of Humanities and Social Sciences, to develop humanitarian values of living, and the constituents of political science and governance for progressive living.
2. College of STEM (Science, Technology, Engineering, Mathematics), to study about STEM operating in (i) our natural world: sun, and stars, lands and oceans, weather and

natural disasters, animals and plants, (ii) our communities, in engineering infrastructure development and home appliances, computers and smartphones, transportation systems and airports, and (iii) within our body, in the form of physiological engineering and biomedical engineering.

**3.** College of Management Science: Business Administration, Smart Cities, and Hospital Healthcare Management

**4.** College of Law, Governance and Public Administration. to address the need for smart governance for promoting economically sustainable cities and urban-rural communities.

**5.** College of Education, to train school and college teachers into preparing student readiness for careers in STEM fields, by teaching how to integrate all STEM fields.

**6.** College of Sports Science and Engineering, to educate scientific sports coaches for working in universities and professional sports, to provide knowledgeable training to sportspersons and athletes, and enhance national performance in international tournaments and Olympic Games.

**7.** College of Yoga, Meditation and Yogapathy, to educate yoga teachers for schools, colleges and hospitals, for promoting health and wellness, cognitive development, and mind-body medicine.

**8.** College of Medicine and Health Sciences, to develop a novel STEM format of medical sciences, leading to precision medicine and technological surgery; this would be the first such medical college in the world.

This philosophical discussion is therefore a clarion call for an agenda of transforming universities in the face of the 4<sup>th</sup> industrial revolution. If this is achieved, we are convinced that it will invigorate higher education for millennials and their comfort with digital lifestyles. Technology and infrastructure providers are appreciably ready for a future that does not return to the comfortable “sage on stage” models of the past but co-create with stakeholders such as students, faculty and regulators a HiEd 4.0 roadmap that ushers a reimagined era that addresses access, cost and effective outcomes. After 10 years in the trenches [9], we are in a position to share some of our insights.

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