

Research Article**Reintegration of Humanities and STEMM: A Mandatory Means for Healthy / Balanced and Sustained Development of India****Prof Ch A Rajendra Prasad**

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Abstract: The gradually increasing divide between Humanities and STEMM in the domain of Higher Education is perceivable for any discerning stakeholder of Higher Education. Thus, there is every need to strike a balance between these seemingly dichotomous streams of Higher Education. In view of this threatening condition that prevails, the present paper attempts to review the basic nature and purpose of Higher Education and recall the essential pre-requisite of the complementary coexistence of Humanities and STEMM by way of referring to the crucial and sustained contribution of Humanities in forming the Identify of a Nation and possibility of the lead and guiding role Humanities could play in the functioning of STEMM in Higher Education. To sustain the argument, the time-tested views of the legendary scientists, like, Einstein, and the living legend of the Software Industry and the Business World thereof and Entrepreneurship, Bill Gates are recalled. Further, in the process, the paper attempts to establish the ongoing State of Affairs concerning Humanities and STEMM. More importantly, the paper concludes by proposing the necessary Ways and Means for causing and sustaining the (re) integration of Humanities and STEMM for the all-round development of India and any given society.

Keywords: Divide between Humanities and STEMM
Complementary Potential of Humanities and STEMM
Humanities and Cultural Identity of a Nation
Ways and Means for Reintegration of Humanities and STEMM

Introduction

In times of Knowledge Societies, Higher Education is gaining greater significance for the reasons that are obvious: all forms of development of a given society and a nation are rooted in the soundness and depths of the knowledge base of the given society and / or the nation. While recognizing the primacy of Higher Education in general in the saga of development of a nation, one must also be cautious about the nature, in the sense of the nature of the Curricula and the Training and /or Orientation and the function of higher education that is being offered.

Taking cognizance of this vital aspect, one has to be discerning and cautious about what comprises Higher Education: STEMM alone or STEMM along with the component of the Marginalized Humanities. This pertinent question, in fact, not a query that has emerged in the recent past but a valid question that has been here in the domain of higher education for quite some time in the modern times wherein and when Science and Technology began to usurp an out of proportion academic space. That is why it is worthwhile to recall what Einstein rightly and emphatically highlighted about the inevitable integration of Humanities and STEMM:

All religions, arts and sciences are branches of the same tree. All these aspirations are directed toward ennobling man's life, lifting it from the sphere of mere physical existence and leading the individual toward freedom" Albert Einstein stated in 1937 and as quoted in The Einstein Reader, p. 7 (Citadel, New York)

Significance and Relevance of the Concept:

The project which is candid in nature in the first-place attempts to unveil the concrete and seminal contribution of the Humanities to the society in tandem with STEMM. It is a fact that the Humanities have always tempered our scientific mind. The great scientists of India including APJ Abdul Kalam and the current chairman of ISRO, Sri Sivan, to mention a few names, have never felt any binary conflict between the Humanities and the STEMM.

In fact, the Humanities in a very significant way has influenced and formed the core of our national policies—be they (quasi) federal state (politically speaking) and mixed economy (economy-wise speaking) reformation over punishment that forms the foundations of our jurisprudence, tempering the innovations in science and technology and helping the needy through affirmative actions resulted in various welfare schemes of our polity to mention a few instances.

But these contributions of the Humanities, direct and indirect nature, have remained more or less in uncelebrated way, and more importantly not given status and support on a par with the STEMM. Hence the concept remains significant as it deals with the core of the nation—the foundational amalgamation of the Humanities and the STEMM in the making of India—the ancient and the contemporary India, and the need of reaffirming ourselves to that cause in an explicit and affirmative way.

In fact, the relevance and significance of the integration of STEMM and Humanities is global, and the same is aptly echoed by Rebecca Goldfine, a senior writer and journalist of Bowdoin Institution: STEM majors might kick off their careers with higher salaries, but research shows that humanities majors often catch up by mid-career, thanks to their adaptability and critical thinking skills—qualities that industries are valuing more and more these days. This highlights the growing need for interdisciplinary approaches to tackle complex problems that require creative, out-of-the-box solutions. Bringing STEM and the humanities together doesn't just expand students' skill sets—it also makes learning more enriching and prepares them for lasting success, both professionally and personally. (Goldfine: 2024)

The pleading for reintegration of Humanities and STEM (Science and Technology, Engineering, Mathematics and Medicine) implies the existing (candidly stating in all modesty) dichotomy between the two. Hence the present project aims to resolve this dichotomy and attempts to establish the ways and means for reintegration of Humanities and STEMM which in turn would contribute to the sustenance of Democracy, Growth (Material and Cultural) and Pluralist India.

While the paper reiterates the everlasting contribution made by the Humanities of all nuances which has brought a unique identity and character for India—be it the national motto, "Satyameva Jayate" from the Hindu scripture Mundaka Upanishad and the Lion Capital of Ashoka (from 13th century Sarnath Stupa) as the symbol of the nation, it recalls joyously how we take pride and glory in these national and cultural identities. Simultaneously, it also puts forward in an equally candid way that thus the Humanities having been taken advantage of, now they seem to have been cold shouldered.

This precarious condition of the pursuit of the Humanities understandably leads to endorsing a society that is materialist minus of humane thinking and acting. Ironically India known for its

prioritizing of humanist outlook over materialist stance is found to be shackled in the materialism in a tacit manner. Thus, one has to confront the 'existential angst' of the Humanities.

The State of Affairs of Reintegration of Humanities and STEMM

Before venturing upon reviewing and recalling the state and status of the Humanities, the umbilical connection between Human beings and the Humanities need be recalled if not overemphasized. But surprisingly the current near-questionable existence of the Humanities betrays the ironical Human Condition that seems to exist.

Perhaps the Present and Future of the Humanities can be best gauged and projected if we recall how the curricula of the ancient societies, societies of the Middle Ages and that of the Modern Age, and how they have incorporated the pursuit of the Humanities thereof. Notwithstanding the adage that every age has its own technology, the societies of the ancient and that of Middle Ages were not machine-based.

As a quick extension, it also must be recalled that the societies of those times pinned their hope for administrative, cultural, philosophical, legal and jurisprudence and moral guidance on the Humanities. On top of these, the moral underpinning of humanist attitude and response to human life and conflicts and crises place the Humanities on a pivotal position. Hence the role of the Humanities in shaping those societies can easily be comprehended.

Further in view of the now-perceived dichotomous existence of the Humanities and the STEMM, it becomes imperative for us to take a candid effort to evaluate the fate of the Humanities in the Indian context. Notwithstanding the seemingly much-avowed and celebrated overriding spiritual and philosophical ambience, materialism has been gaining the ground in the Indian soil. Perhaps per se taking the materialist stance and even believing and living by the same may not be un-virtuous. But the dichotomous stance of virtual celebrating of the spiritual and the philosophical (which are the supposed gains of the Humanist studies) and practical following of the materialist stance have been undoing the position of the Humanities and perhaps at the end of the day the credibility of a nation will be at stake.

That is why Neal Koblitz, a famous scientist and number theorist promptly attempts to do away any imaginary dichotomy between STEMM and Humanities, and warns any grant seeking proposals from STEMM must ensure themselves "...being able to frame technical work within broader societal narratives is the key to advancing STEM research (Koblitz, 2017). In this regard, it is interesting to note the state of affairs of the Humanities is not really that bad in the West perhaps due to the very same reasons/factors practiced differently in the sense: minus laxity, sincerity and indifference in their practice. Of course, it is self-evident that, if not frequently, one would come across debates being held and dilemmas evinced. Perhaps, the saving grace of the West, at least to some extent, the not-so-dichotomous stance towards the pursuit of the Humanities can be perceived. The saving grace is the existence of philosophical and the Humanist discussions have been maintained, and more interestingly they are chronicled and turned into treatises. This per se may not be of vital importance but it evidences a rational and scholarly approach to the Humanities in the west which seems to have kept alive the discipline at various levels, which in turn to have sustained the flow of ideas and ideals of freedom of individual and liberty and democracy.

It is time we realized the Humanities is not abstract /theoretical but concrete and practical. Due to dubiousness and dichotomous stances in the practice (maybe it is harsh to state the factual position but one has to speak out before it is too late) that the potential and relevance of the Humanities is not realized, at least in its full sense. The pursuit of the Humanities when left to its

normal spirit and implications will have far reaching consequences impacting every walk of life including STEMM. Perhaps present pandemic times are the best times to realize this fact.

The pursuit and practice of the disciplines be it Science and Technology in its various nuances and the disciplines of Business and Political Administration and Medical and Space to mention a few cannot be pragmatically pursued for academic, research and innovative purposes without the base of Humanities. The Humanist pursuit is not to be “kind” in an unqualified sense or in the sense of un-thoughtful manner. The Humanist Studies should temper our pursuit of our day-to-day life and our professional life and for that point all walks of life. Fearing to be branded as stating the obvious and the mundane, one has to concede for all our calamities including the COVID-19 is the result of our interventions sans Humanist dimension with Nature coupled with greed/ambition/one-upmanship to rein the world in the Age of Globalization.

The Humanist stance towards Nature definitely drives sense into us the fact of while being part of Nature we cannot expect to ‘exploit’ Nature, which is nothing but exploiting one’s own Mother instead of receiving sustenance from it. It is believed that the R&D devoid of Humanist perceptions has landed us in the COVID-19 and the ilk in the past.

All our studies of various disciplines and practice and experimentation and innovations of the same can make better sense if they are honed by the Humanities. With the hindsight benefit of various calamities especially man-made one can imagine the destructions that have been reaped on the world by an Administrator/ Leader of a Nation without Humanist understanding of the Universe. Similar is the case with Scientists, Entrepreneurs, Doctors, Armed Forces and Teachers devoid of the Humanist perceptions.

Bill Gates’ profoundly thoughtful words, “The role of Humanities is solving global problems,” lift the Humanities from the supposed abstract world to the real world. Though elaborating the words of Bill Gates maybe elaborating the obvious and the writing on the wall, one must do a little bit in that direction.

It is worthwhile to elaborate as the words come from a living legend of the Globe who pragmatically surmises the potential and the relevance of the Humanities. The Humanities by default should be part of the high-profile Science and Technology. The Humanities should form the soul of R& D and Entrepreneurship. The Humanities is not icing but constitute the core of all the disciplines if these disciplines are for the advancement of safety and prosperity of a Nation since a Nation’s prosperity is found amalgamated in the wellbeing of every other nation in the Age of Globalization and/or (as implied) in the Vasudaika Kutumbam.

Hence, the complementary relationship of the Humanities with STEMM must be sustained in the interest of the entire Humanity, across disciplines, professions, regions, religions and nations. In this mission of salvaging the Humanities, pragmatic and affirmative action is needed on the part of Establishment and Civil Societies and/ or Individuals, instead of extending rhetoric support.

Ways and Means for the Realization of Reintegration of Humanities and STEMM in Indian Context and the Beneficial Outcome of the Same in Indian Context:

In the first place the ways and means shall be realized through the following: Exploring the backdrop of the pursuit of the Humanities and the STEMM, and reevaluating their place in the Higher Education Curricula: in a chronological manner in Indian context and in general context.

Hence academia support and intervention in the sustenance and development of the integration under discussion is rightly and practically advocated Debra and Beverly: “Close-up of team of people brainstorming while analyzing mind map laid out on a table. Building successful STEM-humanities programs requires collaboration between faculty, administrators, and other

stakeholders. For example, team-teaching logistics require careful coordination to balance workloads and ensure meaningful engagement between disciplines. Developing flexible, innovative curricula also demands ongoing creativity and adaptability from educators. These efforts are only sustainable with continual budgetary support and institutional commitment to provide the resources and incentives needed for cross-disciplinary collaboration (Cheema, 2022; Bourdeau & Wood, 2021)".

Secondly, by way of enquiring into the nature and the function of the Humanities and the STEMM and their overarching influence in the making of a society—materially and culturally.

Thirdly through establishing the complementary nature that exists between the Humanities and the STEMM and sustaining the same.

Fourthly, by means of pursuing the contributory role of the Humanities in building a Nation's character and sustaining the same in Indian context and in general also. Fifthly, by way of bringing forth the neglected fact of the 'concrete' nature of the Humanities in

contributing to the STEMM and thereby ensuring the growth of the nation with equilibrium--spiritually and materially.

Conclusion:

Thus, the paper concludes that taking cognizance of the prevailing lopsided relationship that exists between the Humanities and the STEMM, and stating that when the same is corrected it becomes means to reintegrate the Humanities and the STEMM in a genuine way (beyond clichéd and rhetorical manner) with a view to sustaining democracy, growth (material and cultural) and pluralism.

Further, the reintegration of the Humanities and the STEMM will be strengthening both the academic disciplines. On top of that the realization of the reintegration will throw light on the current marginalized academic and scholarly existence of the Humanities and the consequent negative fallout thereof on the sustenance of the institutions like Democracy, Growth (material and cultural) and the pluralist India.

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