

Instilling Creativity, Critical Thinking and Values for Holistic Development through Humanities and Liberal Arts Courses among Engineering Students

Pushp Lata* and Devika

Department of Languages, Birla Institute of Technology and Science (BITS), Pilani Rajasthan, India

ABSTRACT

Education gives us not only a platform to succeed, but also the knowledge to polish our social conduct, character, independent thinking and self respect; its greatest gift in fact, is the set of values it imparts to all of us. Education, the continuous learning experience, makes us learn from people and situations, success and failures, leaders and followers and then getting groomed to be the person one aspires to be. The actual aim of education is to teach how to think than what to think. Thus, education not only acts as a means to get a job for earning our livelihood but also helps us lead a life of values. If education makes the learners mechanical and materialistic in their approach, it surely fails to inculcate human values. Education will have little meaning if it fails to train us to apprehend the eternal values, to appreciate the supreme human virtues and the simple decencies of life. However, presently, there is a popularly held belief in the world of education that social studies and humanities are non-essential segments of the curriculum. The students who study science and technical subjects have better job prospects and hence, better fortune as compared to those who opt for humanities and liberal arts courses. Besides, it is also assumed that the students who undertake liberal arts courses are intellectual and academically diligent. The present paper focuses on the relevance of humanities and liberal arts courses if done by the engineering students. It also discusses how the humanities courses focus on fostering value based education so as to develop learning outlook, strong character and analytical attitude.

ARTICLE INFO

Article history:

Received: 16 November 2011

Accepted: 18 February 2012

E-mail addresses:

pushplatabits@gmail.com (Pushp Lata),

devika.bits@gmail.com (Devika)

* Corresponding author

Keywords: Creativity, critical thinking, humanities and liberal arts courses, interdisciplinary and multidisciplinary education, values based education

INTRODUCTION

Merely to cultivate technical capacity without understanding what is true freedom leads to destruction, to greater wars; and that is actually what is happening in the world.

(Krishnamurti, 1953).

The need to move beyond the boundaries of education that is not restricted to learning only the technical information gets substantiated by the above quoted statement of Krishnamurthy. With its formative effect on the mind, character, and physical ability of an individual, education helps society transmit its accumulated knowledge, skills, and values from one generation to another. Learners are exposed to a way of life which does not restrict itself to materialistic pleasures, or self-centred activities, but embraces the understanding of correct action, as well as the depth and beauty of relationships. Fundamentally, education aims to help the individual become the right kind of citizen and thus a true human being. Education should invariably lead to inner transformation and liberation of the human being which eventually helps in the transformation of the society. Opposing parochialism and narrowness in approach, a truly educated person accepts openness and imbibes inclusivity. The shift in focus of present day education geared more towards providing jobs rather than values or inner transformation seems to obfuscate the very aim of it. Since education plays an important role in this field, the drift of governments across the world towards the

vocational courses hinges on the hope that these subjects will provide the much-needed boost to their recession-hit economies.

On the basis of the recently released cut-off list of Delhi University, the Central Board of Secondary Education (CBSE) is forced to plan a revision of the question paper design at Plus 2 (Class XII) level to make it more subjective. CBSE Chairman, Vineet Joshi said the maddening cut-offs were a matter of great concern and it was time for serious introspection on this front (Tandon, A., 2011). Mechanical education and staff examination systems are making the students robots, scarcely trained to think on their own. Like robots and computers, regurgitating the programmed information, students happen to perform or give the 100 % output with least chances of error. *Merely to stuff the child with a lot of information, making him pass examinations, is the most unintelligent form of education.* Despite this level of perfection in modern education, world's problems like population explosion, gender parity, terrorism, ecological imbalance, etc. keep staring at mankind. In spite of all the technological and scientific developments education neither meets with society's aspirations, nor helps people face the fundamental challenges of living. Well-focused educational insights may make the most profound learning possible by eventually providing us with solutions to our everyday societal issues, needs and aspirations. Thus, it is high time to think of fostering values and nurturing creativity through our curriculum which cannot be achieved solely through technical, medical

or finance related courses/streams. This can happen only when humanities and liberal arts courses are made an essential part of curriculum. The senate 156 of Birla Institute of Technology and Science, Pilani, which was passed on 17 July 2011, has made the provision which binds a student to do three Humanities, or Languages or Liberal Arts courses for obtaining their engineering or science degree, a step taken to help students develop their personality holistically.¹

METHODOLOGY

The present paper is a qualitative analysis which focuses on the relevance of humanities and liberal arts courses when done by the engineering students. It also discusses how the humanities courses focus on developing learning outlook, strong character and analytical attitude. On the basis of the literature survey, the study focuses on various aspects like approach towards humanities, creativity, critical thinking, value-based education, and need of the hour.

APPROACH TOWARDS HUMANITIES COURSES

Extensive commercialization of higher education and a greater emphasis on vocational and pre-career university courses have resulted in expansion and popularity of accounting, law, economics, finance, engineering, and applied sciences. Most of the humanities disciplines, in one way or

another, have become poor stepchildren. To add to this, higher education in these disciplines is considered as a system of private investment for monetary benefits which has resulted in the deterioration in quality education and loss of value based education. Consequently, the liberal arts and humanities education does not get its due recognition and importance. It, therefore, has been unnecessarily relegated in recent years. Ironically, the need for better communication skills, positive attitude, well-groomed personality, etc. has drastically increased.

As Einstein wrote, it is not so very important for a person to learn facts, he does not really need a college for that, he can learn them from books, the value of an education in a liberal arts college is not learning of many facts but the training of the mind to think something that cannot be learned from textbooks. And in my book, those are unanswerable arguments for upholding both the arts and the sciences while breaking down the walls between them (A.S.L. & Associates, n.d.).

Recently, many countries have introduced funding cuts in the discipline of arts and humanities at universities, which has an adverse effect on these disciplines in the long run. Some universities are finding it difficult to run their departments smoothly due to the lack of adequate funds. Moreover, an increased demand for graduates, who are 'industry-ready' not associated with an arts and humanities graduate, led to the popularization of the

¹Unpublished *minutes of senate 156* of Birla Institute of Technology and Science, Pilani which was passed on 17 July 2011

notion that humanities and liberal arts disciplines are not good choices for career. However, the complementary part of the truth remains unattended.

The focus on an interdisciplinary education for arts and humanities or engineering or science students adds value to the course and provides well-rounded education. Students are encouraged to engage in research and get involved in 'experiential' learning to get an edge. Talking about the importance of humanities courses, Christopher Manfredi, McGill's Dean of the Faculty of Arts, says, "We strive to ensure our students acquire a broadly based yet thorough understanding of their academic subjects by encouraging innovative interdisciplinary programs with strength in core disciplines. This enhances those very important critical and creative thinking skills." (Manfredi, n.d.)

CREATIVITY

Humanities, which includes linguistics, philosophy, religion, cultural studies, history, the study of arts, music, and literature, is a broad field encompassing numerous liberal arts disciplines; most of these disciplines are devoted to examining some form of human interaction, reasoning or behaviour. Harry R. Garvin and John D. Kirkland in their book entitled, "*New Dimensions in the Humanities and Social Sciences*" acknowledge, "Although the general public is not aware of it, there is at present tremendous intellectual ferment in the Humanities and Social Sciences" (Harry & Kirkland, 1977, pp.9).

Humanities is not rigid in its approach; the problems given to students and the probable solutions by the students tend to be myriad but surprisingly equally related to the core essentiality of the topic. Fundamentals of the courses adhere to the prescribed parameters but the reasoning applied or the relevance measured remains multidimensional which encourages and challenges the students to explore further. Open ended references and solutions ignite the curiosity of the students to get to know the relationship among the arguments, opinions or justifications. "Rather than *relevance*, the humanities scholar is waiting to be convinced of *worth*. The humanities scholar constantly asks during research, is this item worthy of repatriation? Repatriation implies critical, creative judgment" (Plum & Smalley, 1994, pp.161).

Highlighting the importance of creativity, Feldhusen and Goh maintain that it is a parallel construct to intelligence, but it differs from intelligence as it is not restricted to cognitive or intellectual functioning or behavior. Instead, it is concerned with a complex mix of motivational conditions, personality factors, environmental conditions, chance factors, and even products" (Feldhusen & Goh, 1995). In order to facilitate the right kind of environment, attitude and approach, the liberal arts courses provide an apt platform and training to its students.

Creativity gives rise to the "production of novel ideas that are useful and appropriate to the situation (Amabile, 1983; Mumford & Gustafson, 1988, as quoted in Kelly,

2000). Leonard and Swap and many others have come up with a creative process which “consists of 1) preparation, 2) opportunity, 3) divergence or the generation of options, 4) incubation, and 5) convergence or the selection of options” (Kelly, 2000). All the four preparatory steps can be easily instilled through these important courses.

The arts and humanities courses inculcate creative thinking which is indispensable to explore creative and analytical techniques for generating fresh ideas and possibilities and select appropriate solution or take an implementable decision.

VALUE-BASED EDUCATION

Value-based education is a three-fold development, i.e., physical, mental and character of any individual of any gender and age. It is vouchsafed that though physical and mental well-being are important, they are a menace without the third because they get nurtured by character. Value-based education is a tool which provides us not only with a profession which we can pursue but also a purpose in life. The purpose of our life is undoubtedly to know oneself and be ourselves. We cannot do it unless we learn to identify ourselves with all that lives.

Education is too often viewed as the exit route to a better lifestyle rather than the beginning of a lifelong journey. Hence, today’s values have become words, mired in controversy, embraced and reviled, and shockingly, anybody hardly knows how to use them, without turning them into slogans. Referring to the various aspects of life that human beings are concerned with, Mahatma

Gandhi attempted to sensitize people so as to ward off the major structural and collective sins. These are:

1. Politics without principles.
2. Wealth without work.
3. Pleasure without conscience.
4. Knowledge without character.
5. Commerce without morality.
6. Worship without sacrifice.
7. Science and technology without humanity.

(Aman Foundation, n.d.)

Gandhiji’s opinion that a person cannot do right in one area while trying to do wrong in another substantiates that life is an indivisible whole. Success today, on the contrary, gets defined by the power of the wealth that one holds. Consequently, all the symbols, ranging from who occupies the best office, to the size of the pay cheque, luxury car, the Rolex watch, exist side by side with corruption, mind dulling drugs, divorces, abortions, suicides, etc.

We need to build a society that cherishes the pursuit of knowledge because knowledge is better than ignorance; a society whose culture is lived and breathed by its citizens because living and breathing is better than sitting in a mausoleum. Delese Wear and Joseph Zarconi talked about the relevance of higher education and society help the view that a society in which, as if it were the high table of some college where science, technology and the arts sit side by side and talking, learning something new about

themselves and each other are in process; a society in which the riches that higher education has to offer, cultural as well as vocational, escape from the campus and get themselves out into the workplace and into the streets. The sort of society that I want to live in, the sort of society I hope you want to live in too. The sort of society our policy makers and government and in the higher education sector owe it to all of us to preserve, to promote and to protect (Wear & Zacroni, 2006).

While defining value based education, Mullan has aptly held the view that value based education has expanded from the medieval foundation of education to a greater range of human talent involving inclusive number of human beings, holding on to the dream that perhaps someday everybody might be liberated by an education that stands in the service of human freedom (Deirdre, 2001).

Hence, the objective of education in a country like India, which has a glorious heritage and can boast of diversity in geography, culture, values and beliefs very rarely seen in this wide world, should be to educate a student about the value system which is indispensable to live a successful life. There has been a lapse in our value system which the educational institutes should inculcate in a student – that is why there are increased incidences of teenage pregnancies, MMS scandals, student prostitution and academic pressure related suicides. In a new required capstone course for medical students, students at the Northeastern Ohio Universities

College of Medicine were asked to reflect on their relationships with patients, their colleagues, themselves and their families, and the communities they serve, using the humanities, particularly narrative domains, as the primary vehicles for such reflection. The resource persons, Delese and Joseph Zarconi in their final report, stated that indeed professionalism is common parlance everywhere, at all levels. To the extent that we have had the opportunity to use the humanities to encourage meaningful reflection among our students upon the work they will pursue in service to the suffering, we believe that these domains can be consequential to professionalism inquiry.¹³

CRITICAL THINKING

Arts and humanities graduates interest the employers more, as they have the necessary transferable skills which make them adaptable to a wide range of job profiles in numerous sectors. These disciplines empower students with critical thinking buttressing sharper skills in communication, problem-solving, analysis, writing, presentation, critical thinking and negotiation which are much valued by the wider spectrum of employers. Focusing on the wider relevance of these soft courses Dr Parshia Lee-Stecum, Associate Dean (Teaching & Learning) Faculty of Arts, The University of Melbourne, admits that the arts and humanities degree “fosters both creative and analytical acumen, encourages independent research and problem-solving [which are the] flexible skills that employers most value” (Lee-Stecum, n.d.). These soft

courses prepare the students for personal and professional challenges; though majority of students see college as a *proving ground rather than a training ground*.

Other observation that is made regarding the job suitability in the corporate is that most English Literature graduates need not necessarily memorize everything about English Literature for their work. Similarly, most Physics graduates cannot meet with professional expectations merely on the basis of Physics. Again in purely economic terms, it does not matter whether they have heard of the second law of thermodynamics or not. What matters the most is the ability to think critically and analytically. Employers seek those candidates who have the ability to work with people, to know when to lead and when to follow, and communicate clearly. Richard Lambert, the Director General of the CBI (UK) feels: "One of the great pluses of our universities is that we have a strong and diverse system. Some want to make your brain hurt and in others, there is a specific focus on skills. We think that soft skills are an important part of education, not necessarily for everybody, but most people need to be able to get up in the morning (Paton, 2008).

Hence, critical thinking is an important element for all professional fields and academic disciplines. Within the framework of scientific inquiry, the process of critical thinking involves the careful acquisition and multiple interpretation of information and multiple applications. The concepts and principles of critical thinking can be applied to any context or case but only by reflecting

upon its varied dimensions and nature of the application required.

What was valued was the way of thinking, the critical approach and the questioning spirit. There is a need to be broad enough to acknowledge and accept our world of thought and expression in art, science and technology which must be open to each other to make the most of each of them. And this is such an important phase for critical and independent thinking. "This is especially the case in the humanities, where interpretation, evaluation, judgment are particularly important" (Harpham, 2011, pp.133).

It is believed and evidenced that physicists and philosophers learn alike, and we need a good number of people with an inclination for critical thinking, a distinguishing feature of excellence in any academic subject.

NEED OF THE HOUR

In the field of undergraduate teaching, the arts and humanities, undoubtedly, play the critical role for the overall rise in higher education participation. Over the last five years for which we have figures, the number of new entrants to arts and humanities degree courses has risen by no less than 18%. Another important facet is the income earned from overseas students in the arts and humanities. In UK, there are about 80,000 students in Arts and Humanities and they make a direct contribution to about £1.3bn a year to its economy. Davis Lammy, while speaking on value of higher education, stated that funding for the Arts

and Humanities Research Council which was set up five years ago, has risen by 35%, and during the academic year just finished, HEFCE's Quality Related Research Grant attributed to the arts and humanities rose by 86% (Lammy, 2010).

Arts and humanities and their place in liberal arts education are not based mainly on their economic value or what prospects they can offer to graduates, although both are substantial. The main importance of the liberal arts approach lies in the fact that it is by its very essence democratic. It cannot exist without debate, contradiction, difference and the acceptance of difference, just as a healthy democratic society cannot exist without the same. It follows that the liberal arts are by their very essence pluralistic and, they both reflect and help to shape our modern society and that is why the arts and humanities are an essential component of the higher education.

Robert Whelan, the Director of Civitas, wrote recently in the Daily Telegraph, "At the heart of a liberal education is the notion that human beings are capable of moving from barbarism to civilisation by using their intellectual and moral capacities" (Whelan, 2009), an idea which ought to unite scientists and literary intellectuals alike. Robert Whelan further added that arguments like those for a liberal approach to learning were one of the main things that prompted him to share his views. Students who enrol in liberal arts courses as "electives" and which are unnecessary for their chosen disciplines view that

the inclusion of these courses in the curricula of various degree programmes has, however, proven valuable. That approximately forty percent of the Fortune 500 CEOs in 2000 matriculated from liberal arts colleges and/or obtained degrees in the liberal arts (Durden, 2001) underscores the potency of the field and its relevance in technical disciplines (William, n.d.).

So keeping subjects strong individually helps to ensure that they can make their full contribution in a wider context; in terms of both research and teaching, the influence of the arts and humanities extends well beyond their narrow subject boundaries that the concepts of interdisciplinary and multidisciplinary are not just about research and its applications; it applies also to individual student's experience of higher education. Even for the most career-orientated undergraduate, the university experience is far more than studying one or two subjects up to a given level. Therefore, there is a need to redesign and broaden the undergraduate curriculum to a greater or lesser extent. "Whatever we do and whatever we find out, we must make our beginning from what we are, and surely the relevance and importance of the Humanities in the present day is that they can make us better able to approach the great tasks that lie before us. It is well for us to take our eyes off what is astronomically distant, or infinitesimally small, and look at man, and see what we can do about his place at the centre of things"(Davies, 1979, pp.4).

It is interesting to note that some of

the universities have fared stunningly well in employers' preferences—even in the arts and humanities subjects. QS' arts and humanities rankings² survey of universities across the world took six arts and humanities subjects into consideration: Philosophy, Modern Languages, Geography and Area Studies, English Literature and Language, Linguistics and History.

In a 2003 study, the National Association of Colleges and Employers (NACE) found that employers rated communication skills most desirable when considering candidates for employment and no other courses than humanities and languages can equip the students with the kind of essential professional soft skills (National Association of Colleges and Employers, 2003).

A survey which was conducted by the US Census Bureau in 1994 also ascertained the qualities that were considered important in their decision to hire new professionals. For this, 3000 employers across the US were questioned (given below are the results of the survey on the scale of 1 through 5, with 1 being not important and 5 very important) and the most important which they considered was attitude and the next communication skills³. Thus, the two major qualities desired for recruitment, namely, attitude building and communication skills, can be inculcated only through Languages and Humanities courses.

Factor	Rank
Attitude	4.6
Communication skills	4.2
Previous work experience	4.0
Recommendation from current employer	3.4
Recommendation from previous employer	3.4
Industry-based credentials certifying Skills	3.2
Years of schooling completed	2.9
Scores on tests administered as part of interview	2.5
Academic performance (grades)	2.5
Experience or reputation of Applicant's school	2.4
Teacher's recommendation	2.1

Source: US Census Bureau 1994

Fig. 1: Important Qualities Needed for Hiring a Professional

Even the Midwest College Placement Association conducted a study to determine what skills and qualities employers look for in hiring. The results were revealing. The most important skill was oral communication (83%), which was ranked as very important and the third most important skill was the ability to build interpersonal relationships, whereby 74% ranked it very important (Ehringer & Munroe, 1984).

The arts and humanities courses inculcate creative thinking which is indispensable to explore creative and analytical techniques for generating fresh ideas and possibilities and select appropriate solution or take an implementable decision.

In many respects, universities are the ideal place for multidisciplinary learning; on that basis, we should seek new ways to encourage dialogue and interchange among disciplines. The efforts by these universities to regularly upgrade the curriculum, to provide an interdisciplinary approach and ample exposure to practical situations,

² <http://www.topuniversities.com/wur-comment/2011-qs-world-university-rankings%C2%AE-subject-arts-and-humanities>

³ US Census Bureau, 1994.

have paid well. It has led to the arts and humanities disciplines staying relevant in fast-changing times, as well as giving them a new lease of life by making them more practical.

To sum up, education, the learning process which provides students with the basics to understand knowledge in general, nurtures that side of personality that enables students to envisage the broader perspective of life. Any set or system of education that fosters analytical intelligence at the cost of human values is not worth it. Academic institutes with consistent efforts and a focused approach can help students attain the level where they can not only take care of themselves but also take the societal welfare to the next level. An analytical mind, trained for excellence does not meet with the standards and expectations of society, if it lacks values. A mechanical and methodical approach to the implementation of education vitiates its sanctity by refusing it to advance beyond and expand itself. Lack of creativity, absence of values, and want of adaptability signal the immediate need to take precautionary preventive measures to sustain and glorify the very essence of education.

REFERENCES

- A.S.L. & Associates. (n.d). *Memorable Albert Einstein Quotes*. Retrieved on June 27, 2011 from <http://www.asl-associates.com/einsteinquotes.htm>.
- Aman Foundation. (n.d.). Retrieved on June 29, 2011 from <http://www.amanfh.org/Education.html>.
- Davies, R. (1979). The Relevance and Importance of the Humanities in the Present Day. In Woods, J., & Coward, H. G. (Eds.), *Humanities in the Present Day* (pp. 1-10). Ontario: Wilfrid Laurier University Press.
- Deirdre, M. RSM. (2001), *Defining Value-Based Education*. Retrieved on June 20, 2011 from <http://www.juntadeandalucia.es/averroes/vertie/forum/valuebas.htm>.
- Ehringer, D., & Munroe, A. H. (1984). *Principles of Speech Communication*. Glenview: Scott, Foresman and Co.
- Feldhusen, J. F., & Goh, B. E. (1995). Assessing and accessing creativity: An integrative review of theory, research, and development. *Creativity Research Journal* 8(3), 231.
- Garvin, H. R., & Kirkland, J. D. (1977). *New Dimensions in the Humanities and Social Sciences*. New Jersey: Associated University Presses, Inc.
- Harpham, G. G. (2011). *The Humanities and the Dream of America*. Chicago, London: The University of Chicago Press.
- Kelly, E. P. (2000). When Sparks Fly: Igniting Creativity in Groups. *The Academy of Management Executive* 14(1), 157.
- Krishnamurti. (1953), *Jiddu Krishnamurti and his insights into education*. Retrieved on June 4, 2011 from <http://www.infed.org/thinkers/et-krish.htm>.
- Lammy, D. (2010). *The value of higher education in the arts and humanities*. Retrieved June 26, 2011 from http://webarchive.nationalarchives.gov.uk/+http://www.dius.gov.uk/news_and_speeches/speeches/david_lammy/value_of_higher_education. Snapshot taken on 4 March 2010.
- Lee-Stecum, P. (n.d.). *Why humanities degree can still be sound investment*. Retrieved on June 27, 2011 from <http://www.topuniversities.com/wur-comment/why-humanities-degree-can-still-be-sound-investment>.

- Manfredi, C. (n.d.). *Why a humanities degree can still be a sound investment*. Retrieved on June 29, 2011 from <http://www.topuniversities.com/wur-comment/why-humanities-degree-can-still-be-sound-investment>.
- National Association of Colleges and Employers. (2003). *Employers describe perfect job candidate*. Press release.
- Paton, G. (2008, September 17). *Universities should teach basic skills*. The Telegraph, CBI. Retrieved June, 29 2011, from <http://www.telegraph.co.uk/news/uknews/2976456/CBI-Universities-should-teach-basic-skills.html>.
- Plum, T., & Smalley, T. N. (1994). Research as Repatriation. In Reynolds, J. (Ed.), *Reference Services in the Humanities* (pp. 147-166). New York: The Haworth Press, Inc.
- Tandon, A. (2011). *CBSE mulls changing Class XII paper format*. *The Tribune*, Friday, June 17, 2011, Chandigarh, India. Retrieved on October 13, 2011 from <http://www.tribuneindia.com/2011/20110617/main7.htm>.
- Wear, D., & Kuczewski, M. (2004). The professionalism movement: Can we pause? *American Journal of Bioethics*, 4, 1-10.
- Wear, D., & Zarconi, J. (2006). A Humanities-Based Capstone Course in Medical Education: An Affirming and Difficult Look Back. *Journal for Learning through the Arts*, 2(1). Retrieved on June 27, 2011 from <http://escholarship.org/uc/item/0332r7hz>.
- Whelan, R. (2009). *CP Snow's 'Two Cultures' are united in desperation*. Retrieved on June 30, 2011 from <http://www.telegraph.co.uk/technology/5273453/Fifty-years-on-CP-Snows-Two-Cultures-are-united-in-desperation.html>Posted 6:01AM BST.
- William, D. (n.d.). Liberal arts for all, not just the rich. *Chronicle of Higher Education*, 48(8), 120.

