



**English and Engineering Education:
The Need to Move Beyond the Employability Discourse**

K.P.S.K. Ilavenil

Ilavenil K.P.S.K. is a Teaching Research Associate at the Department of English, College of Engineering, Anna University Chennai. She is interested in educational theories, psycholinguistics and ELT. She plans to use her research expertise to increase education among the disadvantaged sections of society. Though she is an established poet and translator, she has set apart her literary career to pursue her dream of obtaining a research degree. She can be contacted at: summerstarts@gmail.com or you can visit her on the web at <http://www.meenakandasamy.com>

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Abstract

The well-known fact that English is the lingua franca of engineering education and thus an essential prerequisite for gaining employment has been substantiated by several studies across the world [cited in Bjorkman (2008)]. However, employability practices in India, which focus on depositing English and communication skill sets in individuals, have attracted a fair share of criticism (Datta et al, 2007). On the one hand, industry has influenced educational institutions to create skill sets as demanded by the labour market, thus shirking



their responsibility to train recruits. On the other hand, educationists have argued that employability orientation in the curriculum could compromise the basic purpose of education. Besides, they have pointed out that soft skills are neither context nor class-neutral and cater exclusively to the elite urban middle class.

In the first section of our paper, we study the deep and well-entrenched links between the English language and Engineering education in India. We study the employability practices prevalent in India and the emphasis that is given to possessing communication skills in English in the second section. In this context, we problematize the reductionism prevalent in educational discourse that considers mere possession of communication skills as employability.

The third section of this paper also suggests the need to move beyond employability to create socially responsible engineers. We further explore the manner in which the English curriculum in engineering institutions can be revised to broaden the focus from employability towards sustainable development and engineering ethics.

1. English and Engineering Education in India

In his study of engineering education in developing countries, Siddharta Bagchi [2002:4] traces the history of engineering education in India. The earliest engineering colleges were opened in the late eighteenth century by the British Empire, whose sole motive was to train Indians to become Public Works Engineers. He attributes the increase in the number of engineering colleges in recent years to state support, as well as the entry of private players into the field of education. He adds that in India, there are no appreciable differences in curriculum between various educational and technical institutions teaching engineering related subjects. He problematizes the fact that there is no emphasis on humanities in the engineering curriculum in these Indian institutions.

Bjorkman [2008:2] has cited several studies to point out that English is the lingua franca of engineering education, i.e. the common language through which people from a large



spectrum of first languages communicate. He wonders whether students' language backgrounds matter when they are assigned group-work projects and whether such a factor is even taken into consideration. Although Bjorkman's study concentrates on Swedish engineers, the fact remains that in a country as multi-lingual as India, this linguistic background could play a major role. Further, the language background of a student in India is based not just on his/her mother-tongue, but also on whether s/he attended an English-medium school. This question is answered in Bagchi, who has pointed out that proficiency in English has never been a criterion for admission to engineering programs in India.

Gereffi [2008:20] notes that engineering graduates in China and India face the prospect of substantial unemployment despite high corporate demand for their services and therefore he raises questions about the "quality" of these recent graduates. Since quality is linked with innovation and entrepreneurship, he calls for the need to produce high-quality engineering talent. He points out that despite the growth in international demand; India (along with China) is facing a significant level of unemployment among its engineers. While statistics show high levels of unemployment among engineers, many large companies complain of difficulties in finding qualified candidates—a "vexing paradox" in the words of Gereffi.

This increasing unemployment of engineers in India has been attributed to their limited communication skills and consequently, the teaching of English in engineering education has been under the scanner. Although Scrase [2004:16] views English language proficiency in globalizing India as an essential component of one's cultural baggage, he is LAO quick to add that it is also a resource "that can eventually open doors into the world of professional employment in India and abroad." Thus, English is immediately linked to employability.

Venkataraman and Krishnamurthy (2) have criticized the English language courses at the tertiary level in India for being excessively knowledge-based instead of being skill-based. They hold that view that despite the focus on communication skills in some of the recent courses introduced in universities and colleges, the courses are handicapped because the objectives are not well defined, and consequently, the teaching methodology, testing and evaluation are sketchy. They point out that engineering graduates produced by Indian



universities suffer due to lack of communicative skills to study in the world-class institutions or work in a global atmosphere.

Consequently, employability has transformed into the new buzzword in engineering education.

2. Employability Practices in India

Employability has been defined as “a set of achievements—skills, understandings, and personal attributes—that make graduates more likely to gain employability and be successful in their chosen occupations” by the Engineering Subject Centre of the UK Higher Education Academy (<http://www.engsc.ac.uk/er/employability>).

In their study of employability, Datta et al argue that the term “employability” itself appears to be an approach or orientation rather than an operational concept with theoretical backup. They feel that despite the haziness of the term, the concept of employability has “spurred very high voltage policy decisions in India”.

Pointing out that the gap between learning through educational system and the employers' expectations of employees has widened in India, Datta et al suggest that there should be increased integration between institutions involved in the supply of labour (training education systems, labour legislation) and the demand side of labour (the business and industry sector). This labour supply-demand mismatch becomes highly pertinent in the tertiary sector which is becoming increasingly sensitive to technological and organizational changes.

They put down three types of qualities that are essential for assessing employability performance:

1. Technical and academic skills specific to the job: these include reading, language, numeric capacity, listening, written communication, oral presentation, global awareness, critical analysis, creativity and self-management.



2. Process skills: problem-solving skills, decision making skills, planning and delegating, teamwork, prioritizing, ethical sensitivity
3. Personal qualities: self-confidence, self-control, self-esteem, social skills, honesty, integrity, adaptability, flexibility, willingness to learn, stress tolerance, emotional intelligence, punctuality, efficiency and reflectiveness.

Skills listed under technical and academic skills are broadly labelled as the communication skills and are taught in English classrooms in Indian engineering education institutions. The latter two qualities are called soft-skills and it is beyond the scope of the paper to delve into them.

The placement cells in engineering institutions carry out the responsibility of building relationships with potential employers in order to place the students. It has been widely suggested that this static view of employability can be discarded in favour of integrating communication skills in the curriculum in order to generate employability skills in individuals.

However, Knight and Yorke (2000) cited in Datta et al (2007:19) argue that changing the curriculum to suit employability has four major drawbacks: 1. the curriculum focuses on short-term goals, 2. old is thrown out for the new, 3. the change is too fast in some cases, 4. the change is only on paper, in other words, there is absolutely no change. This clearly illustrates that shaping the curriculum to meet industries' needs can sometimes end up as a mere eyewash. Putting the onus of employability on educational institutions alone is a case of power-imbalance, and reflects the employers need to have an employable workforce instead of a trainable workforce.

When employers shirk from their responsibility to train candidates and instead demand tailor-made candidates, it merely shows that there has been a watering down of the concept of employability per se. This reductionism of the concept of employability to skills has come in for criticism in India. Krishna and Brihmadessam (2006) cited in Datta et al (2007:21) argue that “soft skills with an emphasis on communication skills are not context or class-neutral”



and tend to be vested with the educated, professional urban middle class. They label this trend as highly regressive and short-sighted.

Conlon [2008: 153] also emphasizes the fact that graduate skills are routinely problematized, whereas, the employment practices of employers are left untouched. This deserves serious analysis in the present global context. The hue-and-cry about the absence of employability skills has taken up much attention: syllabuses are being questioned, ESP's relevance is subjected to question, teaching methodology is under the scanner, admission criteria is being attacked. Yet, there is not a great deal of academic debate on employers indiscriminately laying off workers, haphazardly handing out the pink slip and sending employees on forced vacation. This lop-sided view also needs to be corrected, and such a correction can come about only through internal dissent—a process that can come about only when the employees are equipped with knowledge about the nature of the workforce and industry. It is in this context that the concept of creating not just “employable” but also “socially responsible” engineers comes into play.

3. Employability and Social Responsibility

Conlon [2008:151-2] argues that only social sciences will help engineers understand the context in which they will work and how it will both constrain and enable their capacity for social responsibility, which he defines as a “commitment to a socially just, equitable and sustainable world.” He regrets that a focus on employability alone has failed to equip engineers to be socially responsible because it fails to problematize the current structure of work and society. He therefore calls for a change in accreditation criteria to include outcomes focused on “ethical standards, responsibilities towards people and the environment, teamwork and communication.”

Reviewing the existent literature on engineering skills and employability, he points out those engineering educators are being asked to prepare graduates to insert themselves in the flexible globalized workplace. The increasing demands for education to be more responsive to the needs of the industry have initiated a lot of debate in the academia. Engineering



education has been criticized for taking a technocratic approach aimed at maximizing production and economic efficiency, and at the same time, failing to address issues of distribution. There is a concern that adopting such an attitude will lead to a narrow focus in engineering education whereby graduates are trained to insert themselves into the 'runaway world' of globalization. (Legge 2006, quoted in Conlon [2008:153]).

The fact that “engineers tend to use business considerations as appropriate criteria for engineering decision-making” has come in for harsh criticism (Meiksins and Smith, 1996:9, quoted in Conlon (2008:153). Critics have argued that the discourse of business has dominated engineering, and consequently, engineers are keenly focused on productivity and they do not see the fair distribution of the benefits of economic activity as their concern. The same focus on productivity finds expression in the employability discourse. Competitiveness in the globalized world has led to this increased emphasis on employability.

In fact, the token usage of the word employability in India is being seen as “powerful” enough “to challenge the issues such as reservation policy.” [Datta, 2007:25] Affirmative action, or the so-called reservation policy, is merely a state-mandated action to make employment and the jobs arena into a level-playing field. But, when the whip of “employability” (or crudely, eligibility) is being used today like the “merit criterion” of the 1990s, it is time we clear the air. The juxtaposition of “employability” as something that is to be desired for, and the “reservation policy” as something that has to be wished away and erased from existence reveals a dangerous trend. It is precisely in such a context that the need for also including “social responsibility” into the curriculum comes into play.

It is not only the question of employability, but also the nature of English teaching in India that contributes to this issue. Faust and Nagar [2001:2879] point out that English medium educational institutions help to construct the divide [between English-speaking elite and non-English speaking majority] by “providing not only linguistic skills but also a set of value laden technical and managerial tools that are presented as value neutral.” Such institutions also inculcate “popular values, world-views, and ideologies of modernization and



development that in turn tend to legitimate and increase the economic gaps between the rich and the poor.”

Consequently, we can observe engineering education institutions churning out graduates who lack social responsibility—and who worry only about where they get placed, and how much money they will make. The obvious questions the students fail to ask themselves include: whom are we going to work for, what is this company's corporate history, how pro-people or pro-poor are this companies policies, is our work going to be harmful to people in general. The absolute absence of such ethical questioning is reflected from instances in our daily life. In institutions like the IIT, we find a majority of chemical engineering students lining up to be selected by Dow Chemicals which was responsible for the Bhopal gas tragedy. Engineering students of another university in Chennai have no qualms in seeking sponsorship for their cultural events from Dow Chemicals (a multinational company that is yet to pay a single rupee in damages to Bhopal victims).

Indian engineers are quick to turn into agents of capitalist imperialism. In some cases, just remaining silent has been their greatest sin. Beder (1998) quoted in Conlon [2008: 151] says that the “new engineer” will be a “broad based professional who is socially and environmentally responsible.” The need for the emergence of a “new engineer” came about because engineers were themselves identified with environmentally-damaging technologies. (p.154)

Conlon [2008:156] has identified a number of priorities for engineering educators: they need to fully embrace a commitment to social justice, equality, work humanisation and the principles of sustainable development. He calls for these principles to be introduced in the first year of their studies so that students see these as inherent to engineering and view engineering as a social as well as technical process.

4. Reflections: Questions for the future



The many instances that have been quoted in this research paper only form the proverbial tip of the iceberg. Engineering education needs to widen its focus if students are to be educated as socially responsible engineers. Students need to develop the capacity to situate their individual practice as engineers in its wider social context. Conlon observes that a narrow focus on individual skills and values will never be adequate to prepare engineers who can face the challenge of delivering sustainable and just engineering solutions [2008:155].

He identifies a key constraint related to engineering ethics: he argues that most engineers are employees who do not have control over the projects on which they work, and that they merely solve problems “framed and formulated by others.” He therefore calls upon the engineering profession to start working to influence the restructuring of current social, political, economic and institutional paradigms.

In other words, engineers need to move away from simply promoting globalized competition and instead they ought to promote economic activity which meets vital social needs. Just as we seek to expand the employability discourse in engineering education to include the concept of social responsibility, we also have to have a fresh look at the ESP curriculum in engineering to see if takes into account the cultural and social situation in India today.

Faust and Nagar [2001:2881] have argued that a set of technical skills and the ability to speak English are not the only prerequisite of becoming a part of the techno-managerial elite and that to join those ranks, “one has to adopt a new set of cultural values (including English reading, western music and expensive restaurants) and give up old habits that intimately connected a person to her/his familial and neighbourhood environment. They emphasize the fact that while some people “feel suffocated by the necessity of making this choice” others accept it as a change they must undergo in order to become a part of a privileged social strata. Thus, they conclude that while English-medium education may provide a bridge across the class divide, it also ensures that a person discards her/his inherited cultural baggage in order to cross it.



We can see that learning English (“the language of social advantage and exciting economic opportunities”) fosters attitudinal changes. Studies so far have only probed into how English has been counter-productive, how it has instilled pro-capitalist and pro-imperialist viewpoints apart from making people revile their indigenous culture and social history. We however believe that there is sufficient literature/material available in English itself that can effectively counter such a trend. For example, the greater inclusion of progressive reading material, of successful interventionist struggles by engineers around the world for the sake of society, can give us a set of socially responsible engineers.

Students should be made aware of how society shapes technology and how technology can contribute towards minimizing the imbalances of power. As the nation-builders of tomorrow, such a social responsible engineering workforce will contribute to a stronger, self-sufficient, self-reliant and egalitarian India that the world will look up to. As teachers of the English language, we should make use of the space available within the curriculum to bring about this silent revolution.

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