

## SOFT SKILLS FOR THE ENGINEERING STUDENTS

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### ***Abstract***

*The educational focus in most technical universities of the world is still on developing the hard/ technical skills. However, their educational programs have started to include the training of the soft skills that appears to be essential for the multi- sided development of the future specialists. Soft skills have also become a priority within the well- known “courses in communication” that are being taught in the Romanian technical universities. The components that have received special attention and hence, comprehensive elaboration, are mainly those skills aimed at the technical/ business/ oral and written communication including presentations, meetings, reports, short documents etc. Some other components have been constantly neglected, viz. those dealing with the student’s personal development as an individual, his/her self-awareness, intuition, creativity etc. Unfortunately, these abilities are more difficult to teach because they pertain to the deep psychological aspects that, by definition, are neither directly tangible nor teachable through the conventional teaching instruments. The paper suggests some possible tasks, consisting in slides and short movies that might trigger in students emotions/ ideas conducive to the awakening of some latent aspects of self-knowledge.*

***Keywords:*** personal development, creativity, in-born qualities, self-awareness, intuition

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### ***1. Soft Skills versus Hard Skills***

Hard Skills are the main target of engineering educational systems that essentially deal with the laws and principles of palpable reality. To be more specific, students of the 21-st century have to master the following types of abilities: ”the specialty/subject knowledge, applying information technology, applying tools to model information systems, capacity to identify and solve information management problems in companies, development of an information system (planning, analysis, design, development, testing), development of technical documentation and manuals of the system, numerical and data- handling skills, research skills, developing mathematical skills)” (Cately, 2011). However, the challenges raised by globalization and the resulting demands on tertiary education have lowered the importance of the strictly academic/technical excellence and, consequently, reevaluated soft skills, raising them to a higher position.

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The sub-skills included here refer to communication abilities, foreign language proficiency, proper attitude in relating with the team members, personal organization, time management, personality development a. s .o. Such abilities are considered a must both for the scientific communities and for the professional organizations , mainly because the eligibility of applicants on the job market highly depends on the range of soft skills possessed, as companies prefer hiring graduates who do not need further training in this respect. Most universities worldwide have included soft skill modules in their educational programs, basically aimed at developing professional abilities. They usually include topics like writing documents (business letters, memos, C.V.-s etc.), preparing for job interviews, participating in meetings, delivering presentations etc. The increasing competitiveness on the market and the accelerated design/ produce/ sell cycle have also imposed a faster rhythm and an increased psychological stress on employers and employees alike.

The general climate created has thus required individuals to broaden their abilities “umbrella” that should empower them, for example, to take quick decisions, to manage difficult situations, to control stress or to keep in balance. A possible representation would be a spiral moving upwards, where the bottom zone is taken by the hard skills, basically connected to the down –to-earth aspects of physical reality. The next higher zone could be attributed to the so-called conventional soft-skills of professional communication, with the still higher levels going deeper into the human personality. The top-most part of the spiral might consist in the most subtle and “softest” of the soft- skills pertaining to “self esteem“, “self confidence”, “integrity” and “ethics “ eventually culminating in what is usually termed as “Realization of Oneself”, “Self- Realization” or “Self- Awareness”.

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## ***2. The “Softest” Soft –Skills***

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These skills are the hardest to teach and, in fact, they are practically un-teachable. The reason is that, on the one hand, there is no acquisition model or training strategy and, hence, neither teachers nor students have been exposed to the respective type of knowledge or to the required techniques meant for activating and developing the required sub-skills. Thus, the “softest” of the soft- skills are still beyond the conventional teaching range , a situation which, sooner or later, is likely to be re-evaluated by educators . They are closest to the core of human personality which is the Self or the most active and productive guide , the very source of psychic reality, that wholeness giving the individual the power to perceive himself/ herself as part and parcel of the entire Reality/ Universe. It is due to the Self that humans innately have the ability / skill to develop. Hence, they are “programmed” for self- fulfillment and happiness and the discovery of this inborn disposition is what psychology has called “Individuation” or “Becoming of Personality”. Disregarding this major component of the psyche would be equal to

neglecting the “roots” of the tree while trying to heal it. Dis-alliance with the invisible qualities and innate values is equal to rootlessness and disharmony. Activating the dormant powers, however, results in a connection with the repository of intuition, inventiveness and joy of creation.

All these elements used to be the central part of the ancient educational systems where masters started with developing the primordial spiritual traits before teaching the theoretical/ practical knowledge of the respective field. Thus, before the instruction in the specific laws of science, students were taught the principles of universal harmony, human psychology, morality and ideal behavior. Unfortunately, these traditions have faded in the course of centuries until their total oblivion and neglect.

One possible result of shifting the focus from the subtle values of humanity to the materialistic aspects of life is the strong impact of a society based on competition and consumption that has placed a serious psychological burden on individuals who are not able to manage the challenge. This new climate has started to make educators aware of the limits of the existing theories and techniques. The moment has come for increasing their efficiency by creating access to the deeper zones of human personality, namely, to the inborn qualities and values that, once awakened and properly developed, empower individuals with what specialists have termed “Spiritual Intelligence“ or S.Q.

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### ***3. Developing the Soft Skill of Self-Awareness***

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“Self-Awareness” is a soft-skill that cannot be taught through the traditional teaching methods. Basically, it is rather a psychic process to be monitored from inside under the guidance of a trainer who himself/herself has experienced the development stages involved. In the course of this un-orthodox training, the student has to gradually become aware of his/her inborn qualities/spiritual values that, once awakened, start putting the entire personality into balance. Similar to the conventional teaching process, the student becomes an independent, autonomous entity; controlling and monitoring his/her own progress with the final target of reaching integration and equilibrium.

Traditionally, such soft-skills used to be developed through the master- disciple relationships cultivated within the great spiritual cultures of past history. Nowadays, the interest in such ancient practices seems to have revived mainly due to the acknowledged limitations of the scientific methods used by education, medicine or psychology.

The activities suggested below have been designed for the present-day teaching environment of a foreign class that takes advantage of the e-learning based techniques in order to offer students a “glimpse” of what “self-awareness “might imply. Considering the skepticism of present-day generations towards concepts like

”spirit”, “self”, “yoga” etc. and also the extremely scarce information on their significance and implications, it seemed “safer” to approach this semantic field through the familiar contact with the electronic equipment. Thus, we considered that the potential of a technology-enhanced environment would prove more attractive to the engineering students as addicts of the visual mirage exerted by the internet world.

The tasks provided here are based on the images transmitted by a set of Power Point slides that will mainly perform two roles. First, they will convey certain psychological contents (emotions, states of the spirit) to the class and, second, they will encourage students to become aware of and consciously formulate ideas (in a foreign language) thus engaging both brain hemispheres. The purpose is to trigger a process of introspection and search for personal experiences and also, to motivate them to verbalize and hence, bring forth into consciousness their own hidden and ignored spiritual qualities.

Each slide transmits a visual message that, being extremely clear and suggestive, awakens a certain emotion/ state that can be labeled as one of the subtle values defining the Self. With the computer as a recurrent item, students will be engaged in awareness-raising activities (questions and answers, free discussions, writing diaries etc.) performed through verbalizing the respective psychological contents in a foreign language. The set of tasks aims at creating an inter-play of the intimate world and the linguistic world, as well as at integrating the emotional, spiritual experiences with the conscious, mental/ linguistic components. Thus, the zone of feelings, emotions and spiritual states could be brought into the realm of consciousness more easily. We have to admit, however, that the actual “Self – Awareness” is a complicated process involving self-introspection and yoga-type meditation. The tasks below are only a suggestion for raising the students’ interest in this topic and preparing them for further training depending on their openness and desire.

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#### ***4. The Model***

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These tasks are meant to raise students’ awareness of the spiritual qualities governed by the subtle energy center situated at the navel. The teacher introduces the topic by eliciting from students the idea that man is not only a physical body but also a complex of feelings, emotions and spiritual qualities. The first slide can show, for example, the subtle network of channels and energy centers controlling the physiological and psychological aspects of the human being. The following slides will illustrate the basic qualities of the center (called NABHI in Sanskrit) placed at the navel, which is responsible for an important number of functions and manifestations. The teacher presents each slide at a time eliciting from students the correct word/ label defining the respective spiritual/subtle value. The slides selected and their associated values are given in the following table:

**Visual Image**

1. Seagull
2. Dolphin
3. Lotus Flower
4. Sea Landscape
5. Offering Hands
6. Stone among Sand Ripples
7. Statue of Justice

**Spiritual Quality**

1. Seeking
2. Evolution
3. Satisfaction
4. Peace
5. Generosity
6. Balance
7. Universal Values

The students are asked to describe (in pairs/ groups) the emotions suggested by each slide, explain their choices and present them orally to the class. Also, they may be asked to write a few lines on the relevance of the topic for their future development. Likewise, the teacher can present a second set of slides illustrating the negative counterparts of the values discussed and elicit from students the correct label for each of them: “excess of preoccupation”, “miserliness”, “selfishness”, “anxiety”, “depression”, “anger”, “aggressiveness”.

The post-teaching stage is based on students’ searching the internet sources for a number of activities to be included in their portfolio. One possible activity to be done at the end of the class or as homework could be to answer a short questionnaire including the following items: 1. What did you learn during this class? 2. What did you like about this class? 3. What did you NOT like about this class? 4. What questions could you have asked and you did not? 5. What do you consider you have gained? The students can take the questionnaire with the respective answers home and use it as an input for a diary to be compiled on the computer and sent over to the teacher. The series of personal impressions and, possibly, confessions, to be included in the diary will eventually reflect the protocol of the students’ personal evolution. During the following class, students may ask their peers questions about their own emotions, ideas or reactions triggered by the spiritual values presented on the slides.

The teacher can also initiate a project involving groups of students who will design and present their own productions (Power Point slides, short movies etc.) during the assessment class. They will be encouraged to freely use their inspiration in selecting visual materials available on the internet or in creating original presentations that should engage students in discussions.

The rationale of the stages above consists in stimulating learners to become aware of certain components of their psyche that used to be only intuitively and vaguely known about. On the one hand, they are likely to gain in their introspective abilities and, on the other hand, by verbalizing these personal states, to increase their awareness of their innate qualities and values.

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## **5. Conclusions**

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We have to admit that the short teaching-learning cycle above is only an attempt at raising the students' interest and curiosity for the subtle sides of their personality. It is nothing but a tentative, exploratory enterprise aimed at prospecting for their disposition and openness to such a delicate field. For a start, it could be taken as a "shot in the dark" where the teacher has to be ready both for failure and for unexpected surprise. In reality, everything depends on the "readiness" of the class to receive further information on the topic or to prefer to ignore it. If the teacher is lucky enough to detect the freshness and willingness to absorb more about it, he/she can try to devise a teaching strategy that should bring the topic of the SELF and its miraculous world closer to students.

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