PREPARING ENGINEERING STUDENTS TO SOLVE THE CONTEMPORARY WORLD 'JIGSAW PUZZLE' – FOCUS ON AWARENESS RAISING

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Abstract: That we all live in a definitely new kind of world from all viewpoints has already become a truism – however, what seems to be a bit more difficult for each and every of us, people at the beginning of the 21st century, is to acquire an ability to explore and understand it, forging our way into the complexity of social, political, economic and cultural interactions governing our lives. The paper therefore presents an approach to preparing, within the foreign language classes of various types, higher education students to develop an appropriate aware type of attitude as to the complexity and dynamic of the contemporary world in which they are supposed to evolve as successful professionals and fulfilled human beings. To this end, and based on a coherent framework of principles ranging along paradigms of openness, empathy, tolerance and understanding of variety in intercultural encounters while preserving national identity, a holistic comprehensive approach has been developed, whose components are described, together with the rationale underlying them. In their General English, ESP, EAP and/or CLIL classes, students are gradually guided, by means of various awareness raising activities, towards acquiring the capacity to note and reflect on social, economic, political and cultural phenomena, as would be actors of the labor market, able to permanently reassemble the picture of society and to take educated decisions.

Keywords:foreign language teaching, intercultural phenomena, awareness raising tasks, holistic view, pedagogic principles

Motto:
'The first step toward change is awareness. The second step is acceptance.'
Nathaniel Branden, American psychologist

I. Introduction – paper aim and background

In the current society the phenomena connected with multicultural encounters are omnipresent, unfolding according to a sometimes quite surprising dynamic. There are new forms occuring in various places of the planet, for instance those resulting from massive migration, decomposing and recomposing of certain types of organizations and so on, everything against a background not devoid of instability at all levels.

It appears therefore that one main *responsibility* of educators, including those in higher education forms, is that of creating opportunities for the trainees to understand, analyze and cope with such tremendous changes.

Arhipelag XXI Press, Tîrgu Mureș, 2017, e-ISBN: 978-606-8624-01-3

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One first necessary step in this endeavor is – as the motto chosen for this study puts it – to raise the young generation's *awareness* towards the complexity of the social, political, economic and cultural phenomena going on around.

Understanding the 'pieces of the puzzle' and being able to put them together is a form of maturity conducive to acceptance - and further on to success in one's professional and personal development, in our opinion.

A foreign language teacher in an academia can do this by various means and ways, we maintain, at the various stages of the educational process, by identifying a range of activities and by appropriately shaping the students' profile in this direction.

The ultimate *aim* is, of course, not only to contribute to an increase of the learners' awareness of the features characterizing the world around, but to an equal extent, to endow them with a *comprehending open attitude*, towards such phenomena as *cultural differences*, *national identity*, *tolerance*, *acceptance*, meant to enable their evolution in an ever more intricate world as that we live in.

In the educational setting described here, viz. engineering students of the Bucharest Polytechnic – Faculty of Engineering in Foreign Languages (FILS), with English as the medium of instruction, the need for an increased student awareness of the specific traits characterizing their learning groups, that generally comprise students from over 10 countries/cultures, appears as mandatory.

This can be done – and it is actually being done in various educational contexts all over the world, in different manners, by creatively generating, combining and/or adapting approaches so as to be consistent with the specific features of each academic context.

II. When cultures meet – key theoretical viewpoints on education role

Ever since the last decade of the 20th century, the international community felt the need to reinforce the *role of education* in a changing world (Delors, 1996). Thus, the then UNESCO Chairman emphasized the 'fundamental role' of education in the 'personal and social development'. This role cannot be performed by any kind of 'magic formula', it is maintained, thus pointing to the need for the teachers' creativity and permanent concern in identifying best solutions. These are seen as equally useful means of reducing 'poverty, exclusion, ignorance, oppression and war'.

It is quite useful to analyze fundamental documents that have been developed in countries such as Australia (RacismNoWay, 2015), where these issues are a component of the country's specific profile. Key statements to be found in such real political and social *action manifestoes* can be synthetically expressed as follows:

- one important solution against racism is 'understanding and valuing cultural diversity',
- freedom of exploration of one's own culture and identity should be guaranteed for each person, as a prerequisite for 'developing understandings of the cultural diversity' in the world;
- denial of cultural expression would mean 'limiting the expression of unique perspectives on life', and, equally, impeding the transmission of cultural values and knowledge from 'generation to generation'.

The importance of the *environment* in which each individual evolves is clearly stated (MHachem's Blog, 2011), with culture and language as the two main components contributing to creating 'identities' and making us, people, different from one another.

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Moreover, as shown in the literature (Kennedy White et al., 2005), it should not be neglected that each student brings to the multicultural educational group their *ownidentities*, thus enriching it from the viewpoint of the 'knowledge and assets' that would contribute to making it unique.

Such enrichment by encouraging the *sharing* of values in a multicultural context is also emphasized (Ellison, 2014) for the benefits of broadening perspective and perceptions. What is more, the author advances an interesting opinion, according to which people who have adapted themselves to a second culture are then able to 'adapt more quickly to a third culture', as they 'begin to feel more part of a multicultural construct than citizens of only one culture'.

Concern as to how to approach such a new type of education, that incorporates elements of multiculturalism in class in general, and then in the foreign language class in particular, can be traced back in the 1990s (Nieto, 1992). In her book, the author sees multicultural education as a 'way of equalizing educational experiences', by removing 'barriers that inhibit learning'. Furthermore, it is among the first studies that underline the importance of seeing multicultural education as a *process.*

In recent years, studies were carried out (Colarusso, 2010) on the *directions* teaching should take in multicultural contexts – all based on an attitude of openness, in terms of principles underlying the classroom approach, meant to contribute to the 'modelling' of transformation, by a deep reform of the English curriculum, by including input texts on cultural specificities and/or differences, encouraging dialogues in intercultural communication. The final goal is to turn the English curriculum into a 'more relevant, representative and culturally responsive' one.

As to the *types of teachers* able to turn such a policy into successful reality, the author identifies three such types, all characterized though by a *pro-active* kind of attitude: (i) adaptation/coping, (ii) collaborative inquiry, and (iii) activism. However, the most important thing is that teachers should start assessing 'new directions for teaching English in a multicultural society and the global age'.

The teacher's role in such an activity is not an easy one by far; on the contrary, as shown in the literature (Hoffman, 1996), the teacher's *own* awareness and attitude of permanent *reflection* on the process of implementing multicultural education is of paramount importance. Reflectiveness as a permanent feature of the teacher's action will encourage efficiency in generating models for the learning culture; this seems to be the only possible way one can 'practice education in plural societies'.

That such new constructs should be achieved and also openly *shared* with fellow teachers, and with the students as well, is equally important (Eleuterio, 1997; Hoelscher, 1999). The climate in the classroom will thus be one of trust, 'fostering stronger relationships', conducive to student increased openness and motivation in getting involved. The opposite would be, as pointed out in the literature (Kennedy White et al. 2005), unproductive or even conducive to the phenomenon of 'cultural disconnect'.

To conclude at this stage, the awareness building process should involve both actors in the classroom environment, the teacher and the students. This should be implemented by bringing forth components of the following main paradigms: reflection, attention to details, openness in finding out about the others, unveiling one's own life and cultural beliefs, classroom management that should encourage involving both trainees and trainers, thus giving them equal chances and opportunities of communication and sharing.

III. Awareness raising – a multistage model approach

III.1. General

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A *holistic approach* has been designed, that is meant to raise the FILS engineering students' awareness on the necessity to note, analyze and successfully adapt to the present-day world's features in order to become highly eligible candidates on the labour market (inter)nationally. Successful professionals should be able to flexibly adapt to the general directions the society dynamic takes and make educated decisions that should maintain them at the core of action.

As shaping a *type of attitude* is not such a simple and easy-to-reach objective, it is present and can be discovered, in various forms, at all the stages of the language courses given to the FILS trainees at bachelor level in the first two years (*General English*, *ESP*, *EAP* and *CLIL*).

It is implemented in different manners, consistently appearing as *awareness raising activities* on the visible and/or hidden agenda of the courses offered. Together, such activities can help the students to acquire and develop a good capacity of noting the complex phenomena around (political, social, economic and cultural), reflect upon them and mould their response accordingly, in an as adequate manner as possible.

Moreover, it is hoped that, in time, the trainees will preserve - and even refine - this type of *watchfulness*, as well as their capacity to react and adapt their conduct appropriately in the multicultural environments specific to the workplaces of today's globalized world.

The approach is not invasive, but *mediated* by well chosen input examples, opportunities for discussions and *sharing* of views, in a positive classroom atmosphere that should encourage even reluctant learners to get involved.

The *communicative core* of the approach to the teaching of English underlying all the course types taught, much enriched, in an *eclectic* open nonrigid manner, with numerous other elements that have a sound justification within the proposed coherent *pedagogical framework of principles* at the basis of the instructional process, allows *variety* in the treatment of topics, productive exchanges of views among students from various backgrounds/countries/cultures, and communication in the classroom going on smoothly. All these aspects also guarantee that *openness*, *empathy*, *understanding of diversity* while preserving *national identity* are all fostered in these language lessons.

In what follows, the *main stages* of the approach are presented, together with the *rationale* underlying them, from the viewpoint of the:

- context and brief course description,
- examples of awareness raising tasks and activities,
- contribution to attaining the global objective of the approach.

III.2. Main stages of the approach – brief description and rationale

The first year students at bachelor level of the FILS take a *General English* module in the first term. Within this module, meant to get students from various countries/cultures, with sometimes quite different levels of English language proficiency, to an as homogeneous level as possible. One substantial part of the time is given to developing the trainees' strategies of language learning and using. Teacher created original materials are used, together with input from well-known course books. The activities are based on introspection on one's own learning style and strategies; pair and group discussions are much encouraged. The teacher participates and also shares from her own experience in language learning in an open manner.

Obviously, the rationale underlying these initial tasks is that of providing the students in a group with opportunities to initiate communication, note differences, persuade peers of the values, beliefs, opinions they have already internalized in the country/culture of origin.

Another course, of the CLIL type, that is offered optionally to first year students – and in which most foreign students tend to enroll, as they feel that the proposed syllabus could help

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them to adjust in the FILS context faster and better, is the *English for Engineering Academic Studies - EEAS* one.

In very broad lines, the course provides the students support in developing the *skills* required for engineering study in a faculty having English as the language of tuition, for instance: (i) developing reading/accessing the scientific/technical texts for academic study; (ii) developing writing skills and increasing students' awareness of the problems connected with writing in an engineering academic context; (iii) developing oral communication skills necessary to the students in order to efficiently and actively participating in seminars and to make oral presentations.

Naturally, there are many opportunities for awareness raising activities throughout the EEAS course, but, by way of illustration, one course application is sketchily presented in what follows. It is named: *REASONS FOR RELUCTANCE TO PARTICIPATE IN DISCUSSIONS, IDENTIFIED FROM RESEARCH INTO CULTURAL ATTITUDES*. In groups of three, (plus one student playing the role of an *Observer* for the group performance in terms of: (i) Level of involvement in discussion and observance of recommendable seminar discussion behavior patterns, (ii) Originality, clarity of ideas/opinions, and (iii) Linguistic proficiency), the students discuss and rank a number of such reasons as the following:

- *A// Some traditional cultures value silence and avoid challenge or argument in groups.*
- *B// English-speaking educational culture seems to value an ability to work instantly with strangers, whereas students from other cultures need a longer group-forming process before they feel comfortable.*
- *C// English-speaking educational culture seems to value the ability to respond quickly and spontaneously to new ideas put forward in seminar discussion. Students from other cultures need to know in advance what questions will be asked, and need time to prepare answers.*
- *D// Students can feel their cultural values are being challenged or dismissed when they are asked to adapt to different ways of learning such as seminar discussion so they are reluctant to participate ... etc.*

Certainly, the group's spokesperson has to provide sound arguments for their negotiated upon options. It is an interesting productive activity, which discusses culture-specific variety in the students' attitude as regards speaking in formal contexts by getting the trainees to actually perform in a group – so it is simultaneously a discussion *and* a demonstration that such reluctance should be gradually reduced. Students' feedback to it is generally positive, and as this happens at the beginning of their training period – year one, term one – it has contributed to the learners' better understanding of diversity in the FILS groups profile.

Also during the first year, but in its second part, the students are exposed to some units of the house course book *("English for Professional Communication"*, 2006, Bucharest: Printech). An entire first unit of this ESP type of input is devoted to *'Building a professional relationship across cultures'*; naturally, all its sections cover such cultural differences awareness raising aspects.

Therefore, only two such tasks are mentioned here, emphasizing the classroom treatment chosen for them. The first is the unit Lead-in, where two quotes on the relationship between acceptance and preservation of national identity are under focus – the learners are asked to: (i) explain the meaning of the quotes, and (ii) express their (dis)agreement, with arguments in support of their views. It is a typical group work kind of task, providing opportunities for each student to negotiate their own viewpoints and reach a compromise – a useful step in developing empathy and tolerance.

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The final task of the unit asks the students to draw up a brief set of *cultural tips* for a foreigner visiting their own country, pointing to aspects such as the value of eye contact, taboos in conversation, ways of addressing people in formal circumstances and so on. It is indeed a useful inspired activity for several reasons: it provides an opportunity for all students to share views and find out about their peers' specific cultures and it sensitizes the learners to the differences existing among them and to the need to develop a positive attitude towards such differences. The concept of 'critical incident' when people from different cultures meet is also introduced, and the students are encouraged to share such critical incidents from their own experience. Thus, the trainees gradually get used to working in groups with people from other countries/cultures, *share* views and *negotiate* meaning, a skill that is consistently under focus at later stages by getting the students develop projects in groups, with participants who come from various cultural backgrounds.

Another component of the approach is included in the ESP type of course given to second year students at bachelor level of the FILS (based on the course book *"English for Science and Technology"*, 1996, British Council and Cavaliotti Publishing House) but updated with quite new input as far as the 'Media' unit is concerned, for example.

At this level, the students are already able to develop group projects, with peers from different parts of the world working together to develop short scientific papers and PowerPoint presentations based on them, on a very modern 'umbrella' topic that did not actually exist at the time the course book was printed, namely "Social Media'.

By analyzing some of the titles chosen freely (i.e. not teacher imposed in any way) by the working pairs for their *Social Media* projects, originating of course in the all-encompassing nature of the topic itself, one can realize that in their second year most of the students have already managed to develop an attitude of awareness as regards the phenomena in the contemporary world at planet scale: *"The issue of privacy with social media', 'Social media effects on youth communication', 'LinkedIn – where social meets labor', "Political manipulation through social media'* etc. At this stage, the students seem to have understood that there are aspects trespassing national borders, that should be carefully observed if they wish to easily get integrated into the (inter)national job market.

Finally, at master level, the students are given another CLIL type of course, named *"Scientific and Technical Communication in English - STCE"* (Catelly, Y.-M., 2009, STCE, Bucharest: Printech), which comprises modules of both oral communication and written communication.

Throughout the entire course there are numerous examples of both course input and/or applications where *awareness raising* elements can be found.

For our purpose here, only some typical ones are presented. Thus, the slide on *Speaking to a Multicultural Audience* includes the following:

- *audiences may be composed of individuals from several countries.*
- *you want any audience, international or domestic, to respond positively to your presentation.*
- *you will need to do research to understand how people from other cultures will likely interpret what you say & how you say it etc.*
- *the visual aids you use may also have to be changed, as symbols in one culture may have an entirely different meaning in another.*
- *understanding the ethnic profile of your listeners is perhaps even more important than correctly discerning their knowledge of your topic and their interest level.*

In the same vein, in the slide named *Meetings and Intercultural Differences* there are both tips and further links to be consulted by those who wish to continue to stay tuned to such aspects:

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- *Visiting a foreign culture can be confusing for even the most fearless traveller.*
- *Be informed – A useful resource (covers all of the essentials of conducting business globally) is http://www.executiveplanet.com/*
- *Simply select your destination country – you will receive an overview of cultural do's and taboos, suitable etiquette and advice on appropriate professional behaviour in specific areas of the world.*

Another topic of interest for the attention to be given to cultural differences is that of *Components of Non-verbal Communication*. Tips and explanations are given in this respect, for example: *The combination of these features is often a subconscious choice made by native speakers or even sub-groups/sub-cultures within a language group*.

Similarly, in a slide on *Most important items for oral presentations*, attention is drawn on the role that *body language, eye contact, proximity and posture* do have in *conveying meaning, avoiding misunderstandings and fitting in with the audience's culture*.

IV. Open conclusions

Certainly the approach could only be sketchily presented, but it is to be hoped that it has a transferable character to similar educational settings. The students' feedback, as well as that coming from fellow teachers using some of the proposed activities in their own approach to the teaching of English in various course types, has generally been positive, both by the results of the trainees in their study activity and also by the fact that quite numerous of them have managed to get employment, even if only part-time or flexi time to begin with, ever since their second year at bachelor level.

The essential aspects to be taken into account in designing such an approach are that the students should be prepared not only to note cultural differences and similar phenomena, but also to develop an appropriate attitude in the working and/or studying contexts they perform in and behave/act accordingly.

Finally, it is of equal importance that the trainees should internalize the necessary alertness in recognizing newly created trends in this respect, try to understand them and adjust their behavior to them, as a prerequisite for success in their professional and personal development.

Ultimately, it is the teacher's role to place such aspects under focus in a well-justified pedagogically manner, maintaining an attitude of openness, reflection and acceptance themselves, if they really want to yield a similar one in their learners.

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Arhipelag XXI Press, Tîrgu Mureș, 2017, e-ISBN: 978-606-8624-01-3

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