

TYPES OF META-COMMUNICATIVE ADDRESSING IN THE RELATIONSHIP OF CREATIVE TRAINING PROFESSOR – STUDENTS IN TECHNICAL SCIENCES

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Rezumat. *Aplicând metoda observației, pe baza reacțiilor de răspuns a eșantioanelor de studenți politehniști, autorii pun în evidență moduri de adresare metacomunicativă la nivelul formatorului de tip creativ în Universitatea “Politehnica” din București. Aspectul inovativ îl constituie transferul tipurilor de adresare din domeniul lingvistic în cel psihopedagogic, cu funcția de monitorizare și control a sistemului de intercomunicare din mediul de formare tehnic.*

Abstract. *Applying the method of observation, based on the reactions of samples of technical students, the authors emphasize meta-communicative addressing modes at the level of creative trainer in “Politehnica” University of Bucharest. The innovative aspect is represented by the transfer of the addressing modes from the linguistic field to the psycho-pedagogic field, with the function of monitoring and controlling the intercommunication system in the technical training environment.*

Keywords: metacommunication, training, creativity, trainer, technical field

1. Introduction

Communication is the basic element of the modern society of information and knowledge we live in today and its challenges we need to address to. The path from meta-communication to meta-cognition passes through all kinds of meta-communication forms as an added value in creative training.

The three sources of our present work are: a 18-year-period of creative teaching in “Politehnica” University of Bucharest, a practical experience as visiting Professor in Switzerland, and the ideas coming from the activity as trainers in the “*How to draw up an European project*” course organized in cooperation with the Academy of Romanian Scientists.

2. Some theory

We apply the theory of rehabilitating “structured” active intelligence (Jean Piaget) capable of enriching itself with all past experiences that resemble to new situations, by focusing on the significance and intent of the trainer's message.

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The creative trainer as a locutor has to send his message in such a way that the contact area is as wide as possible between himself and polytechnic students as interlocutors by ensuring a permanently monitored feed-back.

3. Applied method

By applying the observation method, and based on the written answers of the polytechnic students' samples of the courses "*Engineering Creativity*" (2015) and "*How to draw up an European project*" (2016), the authors highlight meta-communication addressing modes at the level of the creative trainer teaching in the "Politehnica" University of Bucharest.

The innovative aspect of this paper is the transfer of the types of addressing from the linguistic field to the psycho-pedagogical one (Sanda-Marina Bădulescu - "*Training of trainers as educators of creativity*"), with the function of monitoring and controlling the intercommunication system in the technical training environment.

4. Communication relationship

First of all, creative trainer – polytechnic student relationship is a relationship of excellence in communication, based on creative communication.

Emphasis should be placed on the communication and meta-communication skills of the trainer who develop the same competencies at the level of each student/interlocutor as equal partner in communication.

Secondary, our work comes to complete the concept of “interculturality” as intercultural relationship among different cultures, namely we are dealing here with the technical culture that interferes with the humanist culture.

A few weeks ago, in Dubai, the World’s Best Teacher Award for 2016 was awarded to a teacher from a particularly cold and isolated region of Canada, in which they work with those mixed-age classes, in the same classroom and at the same time, and in which communication is so important that all information transmission can only be achieved not only through simple communication, but through meta-communication meaning over-language, over-communication, and mimic language, encouragement of sigh, creation of a receptive and incentive atmosphere, and so on.

Why did she get this important award? In the last two years, in that region where there is only one class of students in different age categories, there have been several recorded suicides among the young people because of sadness, cold, and lack of communication due to the isolation. One can figure out what a difficult educational mission to do.

Romanian teachers could and should also take part in that competition, lots of them having a real chance to win this big award because of crossing kilometers, tens of kilometers, sometimes even on foot in isolated mountain regions to attend school, together with their students. There are so many Romanian teachers who are given to this creative training and meta-communication for their students as the second, or even the only family they have.

In the "*Politehnica*" University of Bucharest there is an active group for creativity in teaching with a nice tradition started from more than thirty years ago, and which I myself I have been working in during my eighteen years of teaching as young professor. There were eighteen years with permanent participation in symposiums of applied creativity every year, in Bucharest, Iasi, and Busteni where centers for creativity have been operating, and other twenty years after in some other universities. "*Politehnica*" University of Bucharest was and still is a place where people develop types of meta-communicative addressing in the creative relationship teacher/trainer – polytechnic student. And that is because training trainers for creativity and team working based on meta-communicative addressing mean an every - day – answer to a very important question: what is professors' added value in the university, what are they here for? The answer is to train students as future creative engineers. It is nice that this work is framed in "Productica" section. That is because we are discussing here about the most complex and ineffable product that is called "Human Being" and more precisely "Engineer Student". A daily perfectible human product who has to put his head and heart to his contribution, to use his feelings and his desire to do something useful; his motivation and all his love are seen in the product he offers. This meta-communication approach leads to the formation of the Engineer Student.

When one of the authors was a visiting professor at the University of Neuchâtel in Switzerland, some years ago, she had the opportunity to take part to a symposium where students presented works in which they showed how their professors' voice intonation changed in explaining things, how their look changed, how through a direct look and/or a direct address professors could communicate some arid knowledge, managed to awaken the motivation of students who were not very much attracted to the subject, and were able to bring them, had the highest attendance at courses. It was the highest attendance because Professors were doing their best to use communication relationship and meta-communication. People use to communicate mainly in writing, to get their hands and eyes on pushing to send emails. They are always staring at the computer or phone screen, at school, in the street or home, almost all the time. It is high time to protect our health by reducing written communication, and promoting direct oral communication and meta-communication that have far greater impact in any field of teaching and training.

If we all, professors and students sit at the negotiating table and see each other, we could come to a much faster and more concrete understanding than in writing. The direct method, the oral method of teaching could be back in power. Let us not live any longer in that “*monde réifié*” that the famous French poet Henri Michaux announced and criticized at the same time. Let’s give this active structured intelligence that all of us have, our students have, and about which the famous Swiss linguist and psychologist Jean Piaget have spoken, its merited place. Let us take advantage of this active structured intelligence that can take all the memories, all the experiences of the past, to capitalize on them in new and very new contexts. Let us teach our students to think this way, to use not just simple technical thinking, to truly create products in which to put their soul, and those products will be the best ones.

5. Meta-communicative addressing modes

Communication is the main element in transmitting and spreading general or specialized information.

We take into consideration the general communication skills and the individual competences in transmitting the information, as well as the language skills of communication including communication through specialized languages. It is also about interferences, and transfers between general language and psycho-pedagogical language, scientific language and technical language.

We pass from communication to meta-communication through meta-language including forms of non-verbal language in order to stimulate participants in the formulation of ideas. Our source idea was in a phrase a Professor-Engineer said: “*I am an engineer when you talk* (addressing to someone from the humanists), *I do not understand you, almost I do not understand!*” Here, let us see how to communicate, how to formulate the message in such a way that one understands one another. Let us see how to use the terms, even the specialized ones, in such a way that it is a true interculturality, but also a professional interculturality within. Let us have a communication relationship in which we focus not only on communication, but also on meta-communication skills.

From several types of meta-communicative addressing modes, we have chosen those ones having the most important impact on the students from the psycho-pedagogic point of view. They are also characterizers for the style and expression of the teacher/trainer as promoter of creativity. We have noted as subtitles the moment they took in the creative training.

We used them for addressing to two samples of 30 polytechnic students each, one sample of the “*Engineering Creativity*” course, and one sample of the optional course “*How to draw up an European project*”.

5.1. Addressing to attract or capture the attention

"Do not start now / do not say anything, just listen to and think of it"

This addressing mode corresponds to the incubation phase in the process of creative training.

There are open questions, helpful ones, formulations that can grow slowly, drop by drop, creativity, creative thinking, and creative behavior to each of our students. Professors will ask to their students, in this first phase, because the incubation phase is the precursor stage, not to begin, but to think, to listen to, to think a lot about what they want to say and then to say, after they first having thought.

For two samples of 30 polytechnic students, the positive reactions were of **72%**, the negative reactions were of **8%**, and the neutral ones represented **20%**.

We will look into all of these answers in a next paper, and think about what professors need to do for improving that **72%** of positive responses, because they have to work on it.

5.2. Addressing to control the amount of speech

"What else can you say about that?"

"You could say more if you would think at / if you could understand better what it is about"

This type of incentive questions or/and encouraging urges have the role to proposing creative alternatives.

This is a second step of a creative training to control the amount of discourse, to encourage the students to say more, all what they can say. Or, to understand better, to better formulate their ideas. Proposing creative alternatives is to make students to be accustomed to that, to help them moving on to their professional life.

For the same two 30- polytechnic-student samples, we obtained a percentage of **87%** positive answers, 10% negative ones, and 3% were neutral.

5.3. Addressing to verify or confirm an understanding

"That's what you mean ...?" as an open question

"Have you understood?" as a verification of the two-way communication channel, and assuring a creative feedback.

Verifying or confirming understanding at each student level is very important, because professors need to have the feed-back, they need to know if those whom they address to have got the message. I am always in the process of asking such kind of questions.

Sometimes I “get up” some of my students, but it’s nothing, I am not sorry. It means that at that time I was not quite convincing. And I do not get up them of their sleep, but maybe of a time when they cannot give the answer for the moment. “*What did you mean by that?*”, “*Do/Did you understand me?*” – there are no closed questions, but there are open questions the students are obliged to answer, and they answer by understanding very well what they are talking about, because they cannot answer otherwise. It is the verification of the bidirectional communication channel, which is the feedback professors are expecting, and here the positive response is already much higher than in the first two stage,

Out of the two 30-student-group samples, we registered **90%** of positive answers, **5%** of negative answers, and **5%** of neutral ones.

5.4. Addressing to summary or synthesis

"What I'm trying to tell you is ..."

This type of addressing helps the formulation of open conclusions.

Summarizing or synthesizing is necessary, and even compulsory in any scientific approach. “What I’m trying to tell you is ...” is the explanation in the form of open conclusions that students must constantly give, a complement of the professors’ own conclusions. A teacher should never say “that’s what I know, and that’s what you need to know”. Students have always to be invited to complete their teacher’s science to an immediate progress, both formative and instructive. If 60 years ago the Treaty in Rome was signed with only the first and the last pages filled in as a sign from the God for the six member states at that time and for the coming others to put in their own wishes, if Umberto Eco wrote his Opera Aperta in which every reader could put what he wanted, a White Book with open conclusions can be written by students and professors together.

The same samples of students being used, we obtained a percentage of **60%** of positive answers, **25%** of negative answers, and **15%** of neutral ones.

5.5. Addressing for defining

"Warning, does this tell you anything / does this mean anything to you?"

"Can anyone formulate otherwise / in other words what I said?"

It is a kind of addressing for stimulating divergent thinking in the creative trainer practice.

It means that “pay attention” tell students that something is not a simple definition; it is attracting attention so that students can define their own notions, perhaps in their own way. No answer should be rejected. Even the strangest statement has its own logic. Professors have to see why was that statement, why?

It had an individual logic and one could find that in its individual logic professors and students can carry forward the definition that was done once for all. No definition, in terms of creativity, is a once-for-all one, but it can be enriched and completed. So this is the stimulation of divergent thinking.

Positive answers were **85%**, negative ones represented **10%**, and only **5%** were neutral.

5.6. Addressing for finishing or styling

"Well, you approach the truth ..."

As a basic rule, it is accepted that any assertion supports amendments, stimulating creativity. The creative trainer does not reject any idea suggested by the students, but he/she think of it together with all the students in order to make it valid or not if the case is.

Aiming to create skills in finishing or styling, a creative trainer does never use a reply as: *"No, I do not accept this answer ..."* It is a sentence that blocks creativity, inhibits the will of responses, and could have as a result negative answers or neutral ones. It must be completely absent from the meta-communication register, because there is a certain "logic" in any so-called "mistake", and everyone could learn from it and gain more experience in the given field.

Finishing and styling are essential in encouraging everyone. There are addressing forms saying that students are approaching the truth, and professors accept any assertion that undergoes improvement and stimulates creativity.

This time the registered percentages were of **80%** for positive answers, **5%** for negative answers, and **15%** for a neutral behavior.

5.7. Addressing for correction

"Yes, more than that ..."

"Another important thing ..."

"Other opinion(s) ..."

In this case the expression must correspond to a creative response assessment, and no right-of-reply correction is accepted. It is not a simple correction. The expression must correspond to a creative, spontaneous and immediate evaluation of the answer. Something else could be important, another opinion, the involvement of all the participants, the team spirit, the combination of ideas. That is true creative teaching by meta-communicative addressing.

As far as concerns the results, the positive answers were **90%**, the negative ones **8%**, and only **2%** were neutral responses. As one can see, again positive feedback has grown.

5.8. Addressing for topic specification

"Now I was talking about ..."

"All this does not ..."

"Okay, but that is another important issue ..."

There are some sentences to help students going back or returning on the road to follow, without knocking creative thinking.

Specifying the topic is returning to the basic subject, going back to a path to follow, for this creative thinking leads to the meanders, leads to the scattering of ideas, and we have to return to the core subject after it.

The given answers were **67%** positive ones, **20%** negative ones, and **13%** neutral ones. This is because our students were not mature enough, not from the technical education point of view, but not yet mature as far as creative training is concerned; the positive answers were only 67% for they did not exactly understand what to do. So, the teacher-trainer must really look the way to go.

5.9. Synthesis of response reactions

A synthesis of the involved students' response reactions shows the following results: **60%** to **90%** positive response reactions, **5%** to **25%** negative response reactions, **2%** to **20%** neutral response reactions. The speed of answer reactions will be the subject of another test in the near future.

6. Politeness strategies of meta-communicative addressing

The meta-communicative addressing mitigates the constraints of students' freedom of action and expression. It helps eliminating criticism of individual behavior and activity. It is an important element in promoting public encouragement to express and sustain students' individual ideas and opinions.

Of course, meta-communicative addressing mitigates individual constraints and freedoms of expression, promotes public encouragement, through various politeness strategies. Attention, politeness can be either positive or negative.

In this purpose, the creative trainer has to choose and apply several "politeness strategies" such as: positive politeness and negative politeness.

6.1. Positive politeness

The positive politeness develops all kind of relations of proximity, the acceptance of individual intimacy, the total opening up to the communication partner, and the affective participation, it helps creating an atmosphere of understanding and mutual trust in the teacher/trainer-student relationship.

The positive politeness use has valuable consequences in the training process based on meta-communicative addressing, as a sustainable activity over time with broad outcomes.

6.2. Negative politeness

The negative politeness develops the sense of mutual respect between teachers/trainers and students as equal partners of dialogue.

It is a formal way to get the acceptance, but also the conscious correction of the mistakes, with the consequence of their failure to surrender.

Everything of that has permanent consequences in time, created by the negative politeness of accepting what every student mistakenly says, and honestly correcting mistakes. One will again make the same mistake or others unless he/she is unconscious of why he/she has failed.

Then, in a first stage, the teacher-trainer accepts all from formative politeness, but explains what is not good, with the consequence of resuming and not blocking the students' thinking. It is a negative politeness, but politeness that helps to reduce real mistakes.

By positive or negative politeness professors and students develop the sense of mutual respect between equal partners of dialogue. And every one feels good in an incentive atmosphere of academic activity.

Conclusions

We mentioned in the beginning of this paper the innovative aspect of our work consisting in the transfer of the types of addressing from the linguistic field to the psycho-pedagogical one aiming engineer-students training, and with the function to monitoring and controlling the intercommunication system in the technical training environment.

A range of 60% to 90% registered positive reactions means an ever growing interest in creative thinking and behavior at the training and learning level in our academic courses.

Meta-communicative addressing ways is a real contribution to promote flexibility in academic addressing, adaptability in teaching and breakthrough in our system of higher education.

Based on meta-communicative addressing experience, our professors and students together could write "green books" full of ideas to be discussed and developed in the near future. They should write after it "white books" with proposals and conclusions as ways of acting in order to put into practice future training and education politics.

Each of us can write "white books" on the use, development, efficiency and competitiveness of meta-communication in the dynamic teacher-student relationship.

We all can write an academic "White Paper" containing the ideas to promote and implement meta-communication as a result of wide consultations and debates with the most important representatives and experts in the field.

A "White Paper" will be the next step as a set of proposals for formative action through meta-communication and a nice start for future educational policies at local, regional and national level.

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