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DISCOURSE AS A METHOD OF INSTRUCTION IN HIGHER EDUCATION TEACHING[2]

Abstract: In the beginning, the paper focuses on certain new impulses in higher education didactics. The position of higher education didactics after the Bologna declaration is also considered, with the special emphasis on reconsiderations of its own concepts and teaching methods within them. The text points to the critical tones of the reaches of the reform currents of higher education teaching so far, considered to be for the time being mostly oriented to structural changes, while the essential changes to contribute to the quality of studying have remained neglected. The paper further deals with the innovative approaches to instruction in higher education teaching, as well as the changes in the teaching and learning strategies in emancipatory didactics, i.e. the teaching methods that address the needs to empower emancipatory potentials of students; such teaching methods are fundamental to emoncipatory didactics, which is the theoretical background of the paper. Special attention has been paid to learning aims, referring to the following: critical attitude towards reality which should undergo changes; disentangling oneself from social limitations and emancipation of an individual; autonomy, self-determination and solidarity; learning through communication and interaction in teaching through cooperation between students and teachers. An attempt has been made at giving contribution to realization of these aspects of teaching in higher education teaching through discourse as a method of instruction at university level. The basic characteristics and teaching methodology aspects of discourse are defined and established within the context of meta-theoretical field grounded on critical philosophy of society and emancipatory didactics. Finally, the findings of an explorative empirical research are given, with the most significant ones to be the following:

- being the reason for satisfaction with a discourse as a method of instruction manifested by the majority of students, participatory approach has confirmed the ideas of participatory epistemology in the

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approaches to learning; as a consequence, it leads to achievement of autonomy and self-regulated learning, which are basic elements of emancipatory didactics, as well as cognitive functioning that should be characterized by flexibility, creativity, risk-taking readiness;

- students who have expressed satisfaction with a discourse as a method of instruction have stated the following reasons: possibility for exploration, independence, freedom, etc, manifesting high achievement through creative cognitive reactions. In other words, discourse as a method of instruction suits them best, while other students need to work more in order to adopt the strategies permeated by participative epistemology, getting closer to emancipatory aims of learning in higher education teaching.

Key words: discourse as a method of instruction, higher education teaching, emancipatory didactics, the Bologna process.

Introduction

Through the reform of university studies within the Bologna process higher education didactics has found itself in a position to have to reconsider its concepts, as well as teaching methods within them. This is supported by the critical reviews of the reform currents in higher education teaching and of the intentions of the Bologna process, according to which their reaches are mostly limited to structural changes, leading to the coherence of European higher education space. Essential changes that should have directly contributed to the quality of studies are still not visible enough.

During the very initial phase of introducing the changes at the higher education level numerous teachers have expressed pessimism in regard to the new conditions of teaching in the era of bachelors and masters and have seen them as "a limiting corset" (Eberhardt, 2010) when creating their teaching, as well as deterioration of working conditions and possibilities of mentoring students. At the moment tones could be heard in Europe (Germany, etc; ibid) emphasizing the fear that what has been created through the structural reform is university of "III secondary level" (continuation of secondary school) with studies being to the great extent made school-like. It is considered that as the reform develops it has become more obvious that it essentially refers to the structural and organizational side of the courses with the consequences that, from the standpoint of higher education didactics, stand in the way of the development of science and studies. The task that "higher education institutions should pay more attention to the development of innovation

strategies, in regard to the organization of learning contents, teaching materials and teaching methods" (Cre/Unesco-Cepes, 1997: 11; according to Eberhardt, op. cit.) has not been noticeable so far. In other words, the efforts made in the domain of teaching have been limited to mere structural changes. At the same time, what has been an assumption of the success of the Bologna process project, i.e. the demands to establish "the culture of teaching" that "recognizes and acknowledges the results in teaching to the same extent it recognizes research results that can contribute to reputation" (Council of Europe for Science 2008: 8), has been scarcely perceptible. The critical tones from Europe reflect dissatisfaction with partial disappearance of both European and national university traditions and scientific structures, e.g. the unity of research and teaching, postulated by Humboldt (Eberhart, op. cit.). Namely, what is needed are new didactic impulses to mitigate the criticisms resembling the sentence of Konrad Paul Liessman in his *Theory of Non-Education*: "The misery of European higher education institutions has one name: Bologna" (Liessman, 2006: 104). The situation in Serbia is similar. The criticisms refer to the decrease of the level of demands at academic studies, professors and students being limited by the broadness of studies, limitations regarding the scope of learning material, i.e. literature through the number of ECTS, the lack of differentiation between academic and professional studies, structural changes according to which studies have become increasingly more school-like, fragmentation of fields to modules, terms… In such a way the criticisms of the cited Liessman (2006), according to which the taken course could be classified within the "misconception of learning society" (Ibid), resemble those heard in Serbia that, apart from the previously mentioned, have emphasised the negative aspect of functional knowledge, technocratic approach to knowledge (knowledge as goods, manufactured to be materialized in a new value…), as well as the agreement with the criticisms heard in Germany pointing out that the predominant issue of the reform refers to administrative and organizational side, i.e. structural changes. On the other hand, this should be redirected towards the issues of teaching, instruction and studying, the aspects of the development of quality of higher education didactics that have still been kept in the background. According to the modest opinion of the authoress of these reflections, insufficient attention has been paid to higher education didactics, which would be in the function of reaching the aims leading to self-organized learning of students. self-responsible and self-determined characteristics whose purpose is for students to acquire the competences young people are expected to have not only in the world of labour, but according to contemporary social currents. In other words, what is needed is to integrate the aspect of emancipatory

didactics into formulation and design of university courses in such a way that special attention is paid to the fact that the contents of university studies are generated form research and that they need to undergo a didactic transformation by the very scientist who teaches. According to this, it is necessary for subject contents to transform into a subject of educational process of a student. This imposes the need for the competence for didactic reflection and creation of one's own teaching methodology, in accordance with higher education didactics nowadays acknowledging the need to innovate the organization of learning contents, teaching materials and teaching methods (Cre/Unesco-Cepes 1997: 11). The changes to be expected in this respect should go in the direction of shifting the efforts made at pure structural changes towards what is an assumption of success of the Bologna process, i.e. the demands for the establishment of "teaching culture". This would help us avoid the severe criticisms heard in Europe and becoming also more and more emphasized in Serbia, emphasizing the dissatisfaction caused by a certain level of negligence of the European and national university traditions and scientific structures, such as the unity of research and teaching, postulated by Humboldt and according to the estimations of many up to now well incorporated. Didactics impulses in this sense lead towards the ways of changes at the very didactic scene, towards the possibilities of innovating teaching and learning strategies at higher education level. One of the attempts to respond to these didactic impulses is the application of discourse as a method of instruction in higher education teaching, aiming at reaching the aims of emancipatory didactics.

Theoretical Background and Terminological Delineations

The term *discourse* (Latin *discursus*) denotes conversation, discussion, verbal communication, speech, as well as exposition of a subject, while the term *dispute* (Latin *disputare,* German *Disput*) implies the meaning of having different opinions, a discussion, a debate. In the didactic literature in Serbian speaking region (as well as former Yugoslav), what is most frequently used in this sense is the term conversation method, that is, along with the monologue method, classified within the oral or verbal method. The terms dialogic (Greek *dialogos*), as well as erothematic (Latin *in the form of question*) (Vilotijevic, 1999) have also been used for this method. A dialogue denotes a conversation led by two people, while the same term is used for literary artistic form established and used by antique philosophers, i.e. sophists, like Socrates, Plato and others, while the method in which a speaker asks and the addressee answers the question is called erothematic method. This method is associated with Socrates and

his mayeutics. Nowadays didacticians (Vilotijevic, 2010) consider that neither a dialogue, nor erothematic terminologically "cover" the modern notion of *conversation method.* A dialogue in teaching refers not solely to a conversation of two people and it does not boil down to raising questions and providing answers, although these are the essential methods of the method of dialogue. Vilotijevic (Vilotijevic, 1999) considers that a conversation can be led in the form of discussion, confronting different opinions, leading to a conclusion that the original meaning of the method does not any longer have the same meaning in teaching. Theoretical grounds of understanding of the process of learning today, i.e. epistemological framework of learning in teaching, has put the accent on the importance of constructivism, as well as didactical theories (emancipatory didactics) that follow methodological-theoretical movements; in other words these ideas have permeated new views on meaning and essential determinations of teaching methods. However, we will deal with them further in the text to follow. We would turn here to the discussion on teaching methods and their classification that has constantly been a current issue. We have to admit that there is no unique and generally accepted classification, partly due to the fact that the determination depends on theoretical context of teaching and learning. This is the reason why we have chosen to use the term *discourse as a teaching method* in the text, so that we could mark innovative approaches to instruction in higher education teaching, as well as the changes in the strategies of teaching and learning in emanciptory didactics, i.e. a teaching method that is appropriate for the demands requiring empowering of the emancipatory potential of students.

The main characteristics of the method are as follows:

- discourse implies a conversation led in the form of discussion on a topic, i.e. an issue;
- a discussed issue should be expressed in a polemical manner, so that it opens up possibility of expressing different viewpoints and providing arguments in favour of various standpoints, interpretations, opposed opinions; this leads to a possibility to chose the issues that have not been clearly and unambiguously explicated in science, seeking for further research;
- a discourse implicitly involves discussions broader than a discourse, referring to more expressed conflict of opinions in the situations when science has no clear answers, imposing the need for further research and argumentation of standpoints, getting into more serious scientific waters, the problem of methodology, etc; in other

words, it could be said that it involves the elements of dispute in its original sense.

A conclusion could be drawn according to what has been stated above that the terms like discourse, dispute and dialogue are of similar meaning, i.e. that they have similar elements in their basic determinants, but that their meanings can be differentiated depending on theoretical and didactic conceptions within which they are installed, i.e. applied. It is significant to mention here that it seems that the term discourse is more suitable for didactic practice and that the term dispute would rather be used to denote discussions led by didacticians, i.e. for scientific discussions, even though the discussions led within higher education teaching often do have a lot of elements that could be classified under scientific discussion, or at least they should involve such elements. We have chosen to use the term discourse, having in mind a teaching method according to which instruction develops in such a way to guide students towards self-organized search for information, making independent conclusions according to the information they gather, creating their own standpoints accordingly, expressing their observations on the problematic issues science has still not offered undisputable answers for, expressing their opinions, discussing… It is expected that this could lead to practical expression of participative epistemology, self-determined and self-organized learning, along with mentor guidance of a teacher who is in the function of realization of emancipatory potentials of students. In such a way a number of already familiar methods are getting closer to one another, their characteristics, i.e. their basic elements are intertwined, while, on the other hand, their manifested expressions and their functions have a different form and contribute to different aims. In this sense, it seems that they are heading towards the realization of basic intentions of the Bologna process, contributing to conceptual changes in accordance with contemporary philosophy of knowledge, as a framework of pluralistic concepts in emancipatory didactics and empowerment of emancipatory potentials of students as subjects in learning process.

Theoretical framework of the research is, before all, emancipatory didactics grounded on pluralistic educational concept bringing in democratic values, based on ontological and gnoseological assumptions of pluralism in philosophy, as well as on the pedagogic postulate of functional and critical process of democratization at a faculty and in society. Furthermore, this leads towards "student-oriented didactics" whose task is to practice self-determination and co-determination and to open up possibilities for self-responsible and co-responsible action.

Therefore the paper considers possibilities to get to less ambiguous answers to the questions related to the preparation of young people for cognitive functioning whose main characteristics should be flexibility, creativity, risk-taking readiness, etc. As a consequence, the text deals with the didactic aspects of discourse as a method of instruction in higher education teaching; furthermore, its reaches and limitations are discussed.

Teaching quality management, especially in higher education teaching, is considered an essential determinant of sustainable development in the conditions of highly competitive global market. The strategy is characterised by an emphasized note of innovative development, based on the management of changes that do not stop at the level of adaptive responses to the environment, but rather emphasize new competences for the world of employment. Among these a special place belongs to readiness for change. Psychologists explain such a readiness according to specific cognitive, affective and conative functioning of a person. In cognitive sense, this competence refers to flexible, creative thinking which is not dogmatic, as well as to ability to accept pluralism of ideas; in affective sense, it refers to the ability to tolerate suspense and uncertainty, while in conative sense, it refers to taking initiative, being innovative and ready for risk taking (Djurisic-Bojanovic, 2008). As a consequence, we are facing the idea that it is necessary to prepare young people for the world of work and life in general in pluralistic educational concept that should involve flexibility of educational models, with greater number of optional courses, along with the creation of personalized programs and multi-perspective teaching. The following didactic means of the flexible educational model are usually mentioned: team work, cooperative and individualized work, dialogic methods, nominal methods, the "brainstorming" method (Ibid). Pluralistic education concept is based on democratic values, ontological and gnoseological assumptions of pluralism in philosophy, as well as on the postulate of functional and critical process of democratization in school and society in pedagogy, leading to "student-oriented didactics" with a task to practice self-determination and co-determination and to enable self-responsible and co-responsible action (Kron, 1989). However, the didactic orientation supported by such arguments does not fully insist on social constructs of individual action. In other words, this is another didactic theory that has not been completely positively assessed. It has been reproached for the insufficiency in its efforts made for the aspect of relations and contents at getting closer to democratic self-comprehension of society in an integrated and balanced reality construct, through realization of self-determination and co-determination in the processes of learning and

teachings at the institution of a faculty as a subsystem. In this sense, criticisms have been expressed to the postulates of communicative didactics of Schaffer and Schaller in which personality related to emancipatory postulate is in the basis of open curriculum. In such a way, the extreme tendencies towards relativism of contents and types of learning have become omens of "open didactics" suffering from severe criticisms here in Serbia, as well. Meta-theoretical discussions on student-oriented didactics have been going on for years, and some of its statements would be the following:

1. "self-determination" does not appear only as the most important aim of pedagogic process, but broader, as the only valid organizational criterion that can be met only if it is immediately manifested;
2. the terms of "self-determination" and "emancipation" are insufficiently explained: it has neither been analysed what their relation to other notions (individuality, personality…) is, nor this has been put into *ens sociale* setting.

Having given the previous outlines it might be necessary to turn briefly to the influences of postmodernism on the meta-theoretical conceptions of pedagogy, underlying theoretical frames of didactic concepts. Three basic currents have appeared at the map of theory of science; as a consequence, the main positions of science have been imbedded into these three movements: dialectic-materialistic standpoints, hermeneutically oriented position (pedagogy as a social science) and empirical-analytical standpoints on the science of learning. The representatives or advocates of these three movements have for some time been in some kind of a war. We are well aware of the "dispute on positivism" from the end of 1960ies between the Frankfurt school (Adorno, Habermas and others) and critical rationalism (Popper and others). In the meaning time the discussions have reached still waters, opening up possibilities for better consideration of differences and similarities. For each of the three main streams pedagogical theories and didactic models can be stated that through their theoretical frameworks refer to these basic positions (for further reading see: Gojkov, 2006). What will be closer considered for the need of the research are the elements of theoretical orientations that could be relevant for the theoretical framework of the research whose findings will be presented in the paper.

Acting from the position of critical theory of society, T. Adorno, M. Horkheimer, V. Benjamin, J. Habermas etc. have tried to prove that the obligation of "reason" created in the age of Enlightenment has become

instrumentalized in modern empirical-analytical sciences: orientation towards the welfare of an individual and society has been replaced by the rationalism of purpose that has become and instrument of power of few people. Pedagogues have kept citing two fundamental notions of Frankfurt school: discourse and emancipation. Transferred to didactics, the relation teacher – student goes through the theory and models of the authors like: Klafki, Mollenhauer and Blankerz – the advocates of critical theory in the 1980ies.

As a social science, pedagogy is a consequence of hermeneutic positions of science. The following movements from hermeneutic position have had an important role to play in pedagogy and didactics: American pragmatism, symbolic, interactionism and phenomenology. Since Husserl's phenomenology the way has led directly to existentialism (K. Jaspers) and fundamental ontology of M. Heidegger to Sartre's existentialism and, recently, to the so called *life-world concept*, allowing glimpses on significant influences on pedagogy. What is characteristic for pedagogical practice is the following:

- criticism of school aiming at emancipation,
- one's own aims with a token of emancipation.

Due to the fact that numerous questions have arisen regarding the notional determination of the term "emancipation", it was not possible to create a pedagogical theory to be an undisputable orienting point in practice; as a consequence, critical theory has become an unrealized program, while the discussions on critical pedagogy in Europe have become less passionate.

We would now turn to postmodernism and its function as a scientific-theoretical standpoint that corresponds to the positions of Kuhn and Feyerabend in their discussions on paradigms; what has been under dispute refers to the objectivity of modern science, warning about scientific results being dependant on paradigms (Kuhn), i.e. certain discourses (postmodernism). With its assumptions on equality and incommensurability of scientific knowledge as compared with other types of knowledge, postmodernism has even surpassed Kuhn, opening up, apart from numerous others, the following question within pedagogy: what would be the criteria of differentiating between scientific groundedness and a discourse within the scientific groundedness of pedagogy? The latest scientific-theoretical conception, i.e. constructivism, significant for contemporary didactic concepts (Gojkov, 2005) has faced the same question. It could be concluded here that various pedagogical

conceptions, today present at the pedagogical scene of Europe have been under the influence of different scientific-theoretical concepts.

Many didacticians have had high hopes for the perspectives of postmodernism for didactics. As a consequence, some of them are dedicated to the task of articulating postmodernism believing that there are many valuable ideas there and that didactic approaches can be improved through careful use of "alternative voices" that can often be heard in the field of didactics. At the same time, there are numerous authors who hold that many relations of fundamental postmodernism notions have not been illuminated within didactics. As an illustration, we would refer to the relation between postmodernism and constructivism, according to which postmodernism is seen as a new philosophy and constructivism as a general cognition theory, explicating our understanding of the world. It is significant to invoke the fact here that the roots of a number of constructivistic views on cognition can be found in postmodern philosophies that have been separated from rationalistic, objectivistic and technocratic tendencies of "modern" society, as well as that the philosophy of postmodernism has emphasized the contextual construction of meaning and validity of multiple perspectives, with its key ideas being the following: knowledge is construed by people and groups of people; reality is multi-perspective; truth is grounded on everyday life and social relations; life is a text; thinking is an act of interpretation; facts and values are inseparable; science and all other human activities are based on value.

On the other hand, constructivism is characterised by the following ideas: mental events should be studied; knowledge is dynamic; meaning is construed; learning is a natural consequence of acting; teaching is negotiation with knowledge construction; thought and perception are inseparable; problem solving has a central place for cognition, as well as perception and understanding (Gojkov, op. cit).

Along with the previous statements we would also add several comments on abilities expected nowadays. Unlike the project of modernity, postmodernism distrusts the premises of necessary and possible unity and continuity. Abilities that should be developed in postmodern conditions are no longer primarily the competences of abstract ego-identities (Uhle, 1993), able to reach a consensus on given issues according to rational argumentation supported by the power of a better argument. In a postmodern world there are many better arguments – however, they are incompatible and antagonistic. Postmodern knowledge does not provide

universal criteria by the means of supreme principles that can lead to a consensus; nevertheless; it offers the insight that the agreement has to be and can be reached even if the participants remain in dissent concerning fundamental premises. The claims of postmodern curricula have become more humble: a consensus is a local issue (Gojkov, op. cit).

The above description of what is called postmodernism does not seem to have obvious consequences on the contents of a curriculum. However, these descriptions are relevant with regard to how knowledge is acquired and dealt with in instruction. Postmodern knowledge is also the knowledge on the paradox effects of knowledge: the establishment of global standardization and harmonization, on the one hand, and the establishment of local heterogeneity and individualization, on the other. This paradox is due to the structure of communicative action: communication is enculturating the subject, but it is at the same time significant for its individualization. As the possibilities of communication and information exchanges get faster and more connected, the tendencies of gaining nothing else but artificial and purely pragmatic knowledge also increase. This is a potential problem for the functioning of democracy, if it is not reduced to a rule of majority. To teach and transfer knowledge in postmodern world means to be sensitive to the function and quality of knowledge. The tendency to transfer increasingly more knowledge which is not related to the world in which a learner learns – Husserl called it *Lebenswelt* – may be due to scientific orientation in teaching and problematic pluralism of scientific word. To start with the world in which the learner lives and real experiences of learners might become a crucial point in school and teaching, while the process of delegitimation process of meta-narratives continues and deconstructs modern belief in the continuity of history and biology, emancipation and humanism. Lived worlds are heterogeneous and pluralistic but that does not mean that the postmodern individual would live in some permanent identity crisis (as some sociologists like to exaggerate, for instance Berger et al 1987). Nevertheless, from a pedagogical perspective unity and continuity in the relationship between a teacher and a learner and with regard to the knowledge transmitted and construed is an important feature of today's schools (Noddings, 1992). This circumstance requires a stronger inclusion of the lived world, especially because the postmodern condition tends to move school and teaching in the opposite direction.

On the normative dimension, postmodernism asks for a reflected attitude towards pluralism and tolerance (Zimmerli, 1994). Pluralistic tolerance does not imply that anything is all right and that everything has to be

accepted – such a concept is rather unethical and undemocratic. Pluralistic tolerance is nourished by the insight into the heterogeneity of discourse types and language games. So, today's task is to accept this fact and to develop the ability to fight for one's own convictions without using violence; in other words, to learn to live with more or less permanent disagreement and dissent. This seems to be more important than to achieve the high and surely noble ideal of the subject that searches for a consensus according to rational arguments – an ideal that just a few achieve, anyway. The development of the ability to endure disagreement and dissent is closely connected to the insight that there is always a lack of information and knowledge, and it is connected to individual, often hurtful experiences of getting stuck with powerless, helpless and lacking arguments. To focus on complexity, discontinuity and differences in school and teaching may lead to this postmodern modesty – a modesty that resigns from the modern belief that there are rational solutions to every problem and there is some higher sense and meaning in every difference (Gojkov, 2006b). All this refers to the search for the teaching methods to guide young people towards the above described abilities. Therefore we are searching for new methods of instructions; discourse as a method of instruction seems to be appropriate, especially in higher education teaching where learning contents should involve open questions, controversy issues suitable for self-organized learning and discussions on arguments in favour of the standpoints the students have adopted.

Having provided the previous outline, it could be concluded that theoretical framework of the research is emancipatory didactics, created in the critical social theory of the Frankfurt school and critical emancipatory pedagogy. Habermas, as well as others advocating the critical approach to practice have favoured the realization of emancipatory interests, i.e. the efforts at acquiring and deepening of knowledge and the striving of an individual to build him/herself as an individual who will find its way out of tranditional-cultural determinism and move towards self-determination. Emancipatory pedagogy, grounded on the interests of emancipation, views education and upbringing as communication action created in the weaknesses of immediate reality facing the horizon of future possibility (Koenig and Zedler, 2001). The founders of emancipatory pedagogy, Klauss Mollenhauer, together with others, like Wolfgang Lempert, Klauss Schaller, Wolfgang Klafki, Herwig Blankerz, Herman Gizeke, etc have defined emancipatory pedagogy in various ways. Mollenhauer and Lempert have emphasized subjective factor in emancipatory education, relying on Habermas' view on emancipation putting an accent on the process of social emancipation as a whole, i.e. the

context involving the process of emancipatory education and upbringing (Wulf, 1978). Blankerz has emphasized that the subject of pedagogy is upbringing, encountering a man in the state of "immaturity". Upbringing has to change this state through orientation towards a defined aim, i.e. the aim of man's maturity. The measurement of maturity is in the very structure of upbringing and education. According to this author, pedagogy reconstructs upbringing as a process of emancipation, i.e. it liberates a man so that he or she can turn to him/herself (Blankerz, 1982). Within critical-constructive didactics, Klafki has pointed out that emancipatory education means training for self-determination, co-determination and solidarity (Klafki, 1993). Schultz has referred to Mollenhauer saying that self-education of a student as a member of society cannot be realized without his or her involvement in the determination of an aim, implying learning in groups and legitimacy of education only in the form of a dialogue between the subjects able to act, rather than subjecting a student to teacher's intentions, having in mind that "in anthropological reflection we are seen as beings destined for freedom, with equal right to self-realization, i.e. beings supporting and responsible for one another" (available at http://www.dositej.org.rs). For Herman Gizeke emancipatory education is an effort at realizing emancipation with an individual in the process of growing up who guides oneself towards self-affirmation, self-knowledge and self-determination. This is reached through setting a goal (the development of I-competence, competence for critical reflection, confrontation to repression and shaping of practical, socially responsible integrative partnership and democratic style in upbringing and education (Gizeke, 2004, according to Vilotijevic, op.cit). According to Mollenhauer, the aim of emancipatory pedagogy is emancipation of a man, who has a possibility to distance himself from the given social relations or to change them through self-reflection.

Previously outlined various approaches to emancipatory upbringing and education have the same determinants whose essence is in the following: critical attitude towards reality to be changed; liberation from repression and emancipation of an individual; autonomy, self-determination and solidarity; learning through communication and interaction in teaching where students and teachers cooperate. It seems that all this can be encouraged by previously defined characteristics of a discourse as a method of instruction at higher education level, contextualized within meta-theoretical field grounded on critical philosophy of society and emancipatory didactics.

Methodological Framework

The research is of explorative character with the intention to consider the possibilities and the effects of application of a discourse as a method of instruction in higher education teaching. The question underlying the research refers to the following: how students assess discourse as a method of instruction, aiming at obtaining the evaluation of the effects of discourse as a method of instruction. The effects of the implementation of the method have been considered from two angles. One refers to the aspect of students' acceptance and it is considered according to the statements given by students showing their satisfaction with participation in the discourse, i.e. their assessment of this teaching method. The other angle is considered through cognitive reactions of students in learning and teaching situations observed in the discourse. This is how the thesis has been tested on the acceptance of discourse as a method of instruction by students, i.e. its motivational and cognitive aspect, considering the way higher education didactics has tried to give its contribution to more complete self-observation and self-reflective, self-guided learning leading to self-changes ensuring freedom of person's actions according to contemporary philosophical discussions aiming at creation of competences expected and desirable in working and social context today. The working hypotheses refer to the following:

- students express satisfaction with a discourse as a method of instruction;
- cognitive reactions of students within a discourse reflect cognition elements relevant for creative approaches to problem solving, flexible, creative, non-dogmatic thinking, as well as ability to accept pluralism of ideas; in affective sense they refer to the ability to tolerate suspense, and in connative sense, the abilities refer to taking the initiative, innovativeness and risk-taking readiness.

Along with the above methodological outlines it can be anticipated that there are other questions in the subtext of the problem the research deals with, for example: how students react to a discourse as method of instruction in higher education teaching; what are their cognitive reactions driven by the method like; to what an extent the reactions are a part of their learning strategies and to what an extent they reflect their cognitive style; what are the students satisfied and dissatisfied with in a discourse; what are the correlations between satisfaction and cognitive reactions, etc. According to the outline of the research it is expectable to get answers to some questions directly, while on others only indirectly certain

conclusions can be made, leading to an answer to the question on the innovative potentials of a discourse in higher education teaching, from the standpoint of educational aims and standards imposed to an individual and society at global level.

The research was carried out during the two terms of the academic 2009/10 and 2010/11 within the course *Didactics* at the second your of the Teacher Training Faculty and the course *Methodology of pedagogic research* at the third year of the same faculty. From organizational point of view, students were offered to deal with certain themes according to the method of discourse; i.e. this was seen as a pre-exam obligation and was recognized through certain number of points to be a component of the final mark. The themes for the discourse were given in advance, as well as provisional literature for preparation, while during the classes the discourse was led according to questions and problems; argumentation was provided from the anticipated, as well as other sources students found themselves. The evaluation was carried out after each class, expressed by the anticipated number of points. The students were familiar with the ways of evaluation, i.e. they were aware of the number of points assigned to certain procedures in a discourse. During their engagement the professor evaluated their cognitive reactions in accordance with the demands of emancipatory didactic, as it has already been mentioned in the previous text (observation protocol, construed for the purpose – PPKR). All the reactions were registered and scored relying on the classification closest to Bloom's taxonomy, with a difference that the highest score was assigned to the creative reactions of students which are in accordance with the theoretical framework of emancipatory didactics, i.e. with the theoretical grounds the paper starts from.

Having completed the two courses, a questionnaire was administered according to which students should express their level of satisfaction with this method of instruction, i.e. they were asked what they think of the method of discourse, to what an extent it suits them, i.e. how satisfied they are with it (the questionnaire – ZDMPVN – was designed for the purpose of the research and refers to the following questions: what do you think of a discourse as an instruction method in higher education teaching; what is it that makes you content with such a way of work, and another question was: what would you like to change?). So, the questions were of open type and students stated their standpoints and opinions on a discourse. The subjects were not asked to evaluate the procedures within a discourse and they were not limited in any way; consequently the evaluations involved both positive and negative assessments, as well as

recommendations for further modification of the method. Such an approach was chosen, before all, due to the advantage the freedom of expression implicitly involves.

The research was undertaken on the sample of 207 students. The non-probability sampling technique was used, i.e. the sample was random including 58% of 2nd year students, and the rest of them were 3rd year students. They filled the questionnaire expressing their opinion on discourse as an instruction method within higher education didactics at the end of terms, i.e. in June 2010 and 2011.

The independent variable is a discourse as a method of instruction in higher education teaching, and the dependent variables refer to the following: satisfaction with the discourse; cognitive reactions of students; success expressed by the number of points. The method of systematic non-experimental observation was used in the research. Manipulation of variables in order to change them on purpose was not carried out, but statistic replacements were undertaken through statistic analyses for experimental controls. Apart from the experical method, efforts were made to transform quantity into quality in order to find a correlation of the data with the theoretical framework. In other words, systematic approach was in a sense used according to the synthesis of the data. The main argument in favour of such an approach was found in the very phenomena studied, i.e. in the complexity of teaching and learning in higher education teaching.

The following statistic procedures were used: the correlation between the set of variables representing the aspects of satisfaction with a discourse and the number of points was examined according to linear regression analyses, i.e. stepwise method; factor analysis of the aspect of satisfaction with a discourse was carried out according to the method of categorical principal component analysis; factor analysis of the reactions appearing in the discourse was undertaken according to the categorical principal components analysis method; the link between the set of variables referring to satisfaction with a discourse and the set of variables referring to the reactions in the discourse was studied according to the canonical correlation analysis; hierarchical cluster analysis of the variables from the domain of satisfaction with a discourse was carried out through the between-groups linkage method; the hierarchical cluster analysis of the variables from the domain of reactions appearing in a discourse was done in the same way, i.e. using the method of between-groups linkage. Quadrate Euclidian Distance was used as a cluster distance measure.

Findings and Interpretation

The overview of the findings starts from the consideration of students' reactions to a discourse as a method of instruction, i.e. the starting point will be the consideration of the frequency of the percentage of the statements given by students showing their level of content with discourse as a method of instruction.

1. Satisfaction with a discourse as a method of instruction

Table 1.1.

The percentage of the subjects satisfied with certain aspects of discourse

Satisfaction with a discourse as a method of instruction		Valid percentage
Satisfied with discourse – interesting way of work	yes	39.6%
	not stated	60.4%
Satisfied with discourse – motivational for learning	yes	45.9%
	not stated	54.1%
Satisfied with discourse – better understanding	yes	38.2%
	not stated	61.8%
Satisfied with discourse – feeling free to express oneself	yes	37.2%
	not stated	62.8%
Satisfied with discourse – possibility to express personal opinion	yes	39.1%
	not stated	60.9%
Satisfied with discourse – gradual knowledge acquisition	yes	58.9%
	not stated	41.1%
Satisfied with discourse – enables research work	yes	28.0%
	not stated	72.0%
Satisfied with discourse – opportunity to get better grades	yes	27.1%
	not stated	72.9%
Satisfied with discourse – possibility to get an insight into the heart of the mater	yes	19.3%
	not stated	80.7%
Satisfied with discourse – student's engagement is more appreciated	yes	18.8%
	not stated	81.2%
Satisfied with discourse – interesting to work in a team	yes	8.2%
	not stated	91.8%
Satisfied with discourse – stage fright when participating in a discussion as an obstacle	yes	9.7%
	not stated	90.3%
Satisfied with discourse – the same students always have dominant	yes	8.7%
	not stated	91.3%
Satisfied with discourse - it is time-consuming to prepare for each class	yes	21.7%
	not stated	78.3%
Satisfied with discourse – I prefer professor's lectures more than discussion of others	yes	19.3%
	not stated	80.7%

The **Table** 1.1. shows, in comparison to the total number of statements given by students in regard to the value of a discourse, that what has been most frequently mentioned is that such a way of work "**opens up possibilities for gradual knowledge acquisition",** followed by the statement "**motivational for learning",** while at the third place the following statement appears "**interesting way of work"**. At the opposite end of the scale, i.e. at the bottom of the ranking list according to the number of statements the statement is found that a discourse opens up "**possibility to get an insight into the heart of the mater**". At the same time low percentage of the subjects stated that "**it is interesting to work in a team**" and that "**always the same students have a dominant role in a discussion**".

At the very first step it can be noticed that the most attention, i.e. the greatest satisfaction of students refers to the possibility to acquire knowledge gradually, as well as that discourse motivates them for learning, since it is interesting to work in this way. These could be taken as the strongest sides of a discourse, having in mind that majority of students have emphasized these characteristics of a discourse. On the other hand, it can be seen that there are students who, apart from this (they were not limited either in stating what they consider positive in the method or in suggestions what should be changed, i.e. they could have stated a number of advantages, as well as shortcomings) have pointed out what they considered a negative side of discourse as a method of instruction, like, for example "**always the same students have a dominant role in discussion", "it is time-consuming to prepare for each class"...** Considering that the previous findings show that a discourse as a method of instruction is suitable for majority of students mostly because the way of work is interesting, it is motivating and facilitate knowledge acquisition through gradual learning, we can conclude that these are the strongest points for the student**s** who had participated in it; furthermore, it seems that this way of implementation has shown such a side of the method, i.e. it was experienced by most of the students in this way. What is my point here? It seems to me that these actually are not the strongest points of a discourse as a method of instruction in higher education teaching; furthermore the potentials of students are not such that they are not able to reveal its other sides, i.e. the minority of students that in this attempt of using the method of discourse might not have been a minority if this aspect of a discourse had been more emphasized. However, this issue remains open for the second step of the project. Namely, we are facing the need for the research to focus on the issue of reaches of a discourse as instructional method from the angle of higher levels of learning and knowledge quality,

i.e. whether it has revealed new ideas, whether it has condensed thoughts and main ideas, analysed theories from the standpoint of possibility of their application, etc. It is significant to mention here that the reasons for this can be various. Some of them might refer to the learning strategies adopted until now, pre-knowledge of theoretical concepts, etc. At the same time, greater certainty in the explication of the finding according to these aspects implies a new outline of a research, as well. The fact that could be seen as a significant finding is that the method has caused positive reactions in the case of the students, i.e. they expressed content in a great number of statements, while discontent was manifested in a low percentage and it refers to the finding that some students appreciate professor's lectures more, that they have a feeling of discomfort when participating in a group discussion or that they had to prepare for each class, which was time-consuming. It is important to consider each of the statements individually. It seems that they do not point to something that would be an essential shortcoming of a discourse as a method of instruction; they are rather indicators of individual differences of students, their habit to attend lectures, rather than participate in them, i.e. rather than learning systematically along with active participation. From this angle it could be said that a discourse as a method of instruction in higher education teaching was well accepted by the students involved, thus confirming the general hypothesis on acceptability of a discourse by students, with an accent on its motivational aspect. This confirms the value of discourse in the sense of contributing to self-guided learning, ensuring the way to freedom of action of persons, towards competences expected by the contemporary conditions of labour and social context. As it has already been mentioned in the text above, this actually is the aim of emancipotory pedagogy and didactics, i.e. emancipation of a man, who through self-reflection has a possibility either to distance from the given social relations or to change them. It is expected that such an involvement of students into learning processes would lead to liberation from restrictions and emancipation of an individual: autonomy, self-determination and solidarity. Learning through communication and interaction in teaching in which students and a teacher cooperate has turned out to be a good method serving as a complement to confirmations in meta-theoretical field, grounded on critical philosophy of society and emancipatory didactics.

2. Students' reactions in a discourse

Table 2.1.

The percentage of subjects showing presence/absence of certain reaction in a discourse

Reaction in a discourse		Valid percentage
Reaction in a discourse – data interpretation	no	44.4%
	yes	55.6%
Reaction in a discourse – derivation of phenomena characteristics according to analyses	no	61.4%
	yes	38.6%
Reaction in a discourse – interpretation of data in a new way	no	76.3%
	yes	23.7%
Reaction in a discourse –analysis of theory and finding ways of implementation	no	85.0%
	yes	15.0%
Reaction in a discourse – examples for theory argumentation	no	71.5%
	yes	28.5%
Reaction in a discourse –making conclusions	no	47.8%
	yes	52.2%
Reaction in a discourse – examples for implementation of concepts	no	44.0%
	yes	56.0%
Reaction in a discourse – notional analysis	no	33.8%
	yes	66.2%
Reaction in a discourse – argumentation	no	47.3%
	yes	52.7%
Reaction in a discourse – noticing regularities	no	69.1%
	yes	30.9%
Reaction in a discourse –making a list of characteristic features	no	51.2%
	yes	48.8%
Reaction in a discourse – comparison of texts	no	61.4%
	yes	38.6%
Reaction in a discourse – revealing new ideas	no	73.4%
	yes	26.6%
Reaction in a discourse – attributing new meanings to data	no	76.7%
	yes	23.3%
Reaction in a discourse – condensation of main ideas	no	79.2%
	yes	20.8%

The **Table** 2.1 shows that there is significantly lower number of subjects who "**interpret data in a new way**", "**find ways of implementation of a theory**", provide "**examples for argumentation of a theory**", "**reveal new ideas**", "**attribute new meanings to data**" or "**condense main ideas**". Ranking the reactions of students, we could say that, as it can be seen according to the table, the following reactions are on the top of the list: **notional analysis** (66,2%), **examples for implementation of concepts**

(56%), **data interpretation** (55,6%). These findings serve us to check the second part of the hypothesis, i.e. the second working hypothesis. Considering the findings we could reach a conclusion that they clearly show the level of cognitive reaction of students within a discourse, reflecting elements of cognition relevant for creative approaches to problem solving, flexible, creative, non-dogmatic thinking, as well as ability to accept pluralism of ideas; in affective sense, the findings should refer to ability to tolerate uncertainty and suspense, and in the conative sense they are to refer to showing initiative, being innovative and ready to take a risk. The finding that these very cognitive reactions were less expressed is in favour of a conclusion that the second working hypothesis cannot be confirmed. Such a finding indicates a dichotomy of the levels of cognitive reactions, i.e. of a larger number of students who participate in a discourse through **"notional analysis" (66%),** providing **"examples for implementation of concepts" (56%), "interpretation of arguments" (55,6%), "making conclusions" (52,7%), "derivation of phenomena characteristics according to analysis" (52,2).** At the opposite side there are cognitive reactions of students referring to creativity. If we try to consider the status of the second working hypothesis according to this, we can say that students have not to a sufficient degree expressed cognitive reactions reflecting the elements of cognition significant for creative approaches to problem solving, flexible, creative, non-dogmatic thinking; consequently, this would lead to a conclusion that we could not count on their abilities to accept pluralism of ideas; in affective sense, we are facing weaker ability to tolerate uncertainty while in conative sense the findings indicate not so strongly expressed inclination towards taking initiative, being innovative and ready to take a risk. As a consequence, a conclusion could be made that students in their strategies do not have sufficiently developed creative approaches, as well as that their meta-cognitive strategies are still at the lower levels, and that we should take long steps in order to reach the aims proclaimed by emancipatory didactic, like those previously mentioned: self-observation and self-guided, self-reflective learning, leading to self-changes opening up possibilities for already explicated freedom of person's actions in accordance with contemporary philosophical discussions leading to creation of competences expected by contemporary working and social setting at global level.

3. Satisfaction with a discourse and a number of points

Having in mind that the students have expressed **"possibility to get a better grade"** as one of the reasons for being satisfied with a discourse as

a method of instruction, I was interested in the influence such a statement could have on the realized number of points, i.e. to what an extent this was connected with their content with a discourse. The relation between the set of variables representing the aspects of discourse satisfaction and the number of points was examined according to the linear repression analysis, i.e. stepwise method. The analysis was carried out in four steps with the last step in the model including four aspects of satisfaction with a discourse as relevant predictors of the number of points: **possibility of research work, interesting way of work, possibility to express one's own personal opinion** and **professor's lectures** in comparison to **discussion of others.**

Table 3.1.

Coefficient of multiple correlation (R) and its quadrate in the models involving satisfaction with a discourse as a predictor and the number of points as dependent variable

Model	R	R quadrate
1	.806[a]	.650
2	.813[b]	.661
3	.822[c]	.675
4	.828[d]	.685

a. Predictors: Satisfaction with a discourse – provides opportunity for research work
b. Predictors: Satisfaction with a discourse – provides opportunity for research work, Satisfaction with a discourse – interesting way of work
c. Predictors: Satisfaction with a discourse – provides opportunity for research work, Satisfaction with a discourse – interesting way of work, Satisfaction with a discourse – possibility to express one's own personal opinion
d. Predictors: Satisfaction with a discourse – provides opportunity for research work, Satisfaction with a discourse – interesting way of work, Satisfaction with a discourse – possibility to express one's own personal opinion, Satisfaction with a discourse – I prefer professor's lectures to discussion of others.

The **Table 3.1** shows that the correlation between the set of previously stated aspects of satisfaction with a discourse and a number of points is significantly high – 0,83.

Table 3.2.
Standardized regression coefficient (Beta)

Model		Stand. coefficients
		Beta
1	(Constant)	
	Enables research work	.806
2	(Constant)	
	Enables research work	.811
	Interesting way of work	-.105
3	(Constant)	
	Enables research work	.876
	Interesting way of work	-.122
	Expression of personal opinion	-.137
4	(Constant)	
	Enables research work	.871
	Interesting way of work	-.120
	Expression of personal opinion	-.152
	Preferring professor's lecture to discussion led by others	-.103

Table 3.2 shows the nature of the direction of previously mentioned connection: the subjects who have stated that a discourse opens up possibilities for research work are inclined to have a higher number of points than those who have not stated this advantage. Furthermore, those who have not stated that the work in a discourse is interesting, that it allows expression of one's own personal expression and that they prefer professor's lectures to discussions led by others are also inclined to have higher number of points.

The interpretation of previous findings imposes an observation that the constants like "research work" , "interesting way of work" and "possibility to express one's own personal opinion" fit into emancipatory aims that can be classified under cognitive competences referring to flexible, creative, non-dogmatic thinking, as well as the ability to accept pluralism of ideas, ability to tolerant uncertainty in affective sense and initiative, innovativeness and risk-taking readiness in conative sense. Contrary to what has just been said, the predictor included in the last model referring to "preferring professor's lectures to discussion of students during classes" does not fit with this set. Nevertheless the statement has found its place within significant predictors of success expressed by number of points, implying that there is a group of students who are more satisfied with traditional lectures than a discourse. Such a finding raises another question to be addressed in a future research; in other words a research

could be undertaken dealing with the issue of needs for individualization of teaching methods during studies. However, this, as well as other questions like, for example: to what an extent the finding is permeated by the level of development of individual work techniques, to what a degree the meta-cognitive abilities of students have developed... The basic conclusion imposing itself refers to the statement that the main predictor of student's success in the sense of achievements expressed by the number of points actually is highly manifested research abilities, since these were the students who as a rule got higher number of points. On the other hand, it should be mentioned that it is not impossible that just the same number of points, i.e. high achievements, were reached y students who are not thrilled by a discourse as a method of teaching. One of the angles of considering this finding could refer to cognitive style, which, as a hypothetical construct with a broad range of abilities and personality features, is an indicator of idiosyncrasy, manifested here, underlying long known fact on the non-existence of a universal method, both from the aspect of aims and contents and from the angle of an individual.

4. Reactions appearing in a discourse and a number of points

The confirmation of what has just been pointed out but from another angle can be found in the correlation between reactions appearing in a discourse and a number of points. The relation between the set of variables representing reactions in a discourse and a number of points is tested according to linear regression analysis, stepwise method. The analysis was carried out in four steps, with the last step in the model comprising four reactions appearing in a discourse as a significant predictor of the number of points: **attributing new meanings to data, condensation of main ideas, comparison of texts** and **data interpretation.**

Table 4.1.
The coefficient of multiple correlation (R) and its quadrate in the models involving reactions appearing in a discourse as predictors and a number of points as dependant variable

Model	R	R kvadrat
1	.859[a]	.737
2	.909[b]	.827
3	.925[c]	.856
4	.927[d]	.859

a. Predictors: Reaction in a discourse – giving new meanings to data
b. Predictors: Reaction in a discourse – giving new meanings to data, Reaction in a discourse – condensation of main ideas
c. Predictors: Reaction in a discourse – giving new meanings to data, Reaction in a discourse – condensation of main ideas, Reaction in a discourse – texts comparison
d. Predictors: Reaction in a discourse – giving new meanings to data, Reaction in a discourse – condensation of main ideas, Reaction in a discourse – texts comparison, Reaction in a discourse – data interpretation

Table 4.1 shows that the correlation between the set of four above mentioned reactions in a discourse and the number of points is rather high – 0,93. What can also be seen according to the **Table 4.1** is the direction of the stated correlation: those students who give new meanings to data, condense ideas and compare texts are more inclined to have a larger number of points than those who do not manifest these reactions. Furthermore, those students who do not interpret data are inclined to get a higher number of points (although this correlation is significantly less expressed).

Table 4.2

Standardized regression coefficients (Beta)

Model		Standardized coefficients
		Beta
1	(Constant)	
	Reaction in a discourse – giving new meanings to data	.859
2	(Constant)	
	Reaction in a discourse – giving new meanings to data	.560
	Reaction in a discourse – condensation of main ideas	.423
3	(Constant)	
	Reaction in a discourse – giving new meanings to data	.545
	Reaction in a discourse – condensation of main ideas	.436
	Reaction in a discourse – comparison of texts	.171
4	(Constant)	
	Reaction in a discourse – giving new meanings to data	.544
	Reaction in a discourse – condensation of main ideas	.432
	Reaction in a discourse – comparison of texts	.165
	Reaction in a discourse – data interpretation	-.061

5. Factor analysis of satisfaction with a discourse

Factor analysis of the aspects of satisfaction with a discourse was carried out according to Categorical Principal Components Analysis method. Taking into consideration the number of factors (principal components) and the percentage of a variance they interpret, it has turned out that the solution with six factors is optimal. These 6 factors explicate 70% of variance in the aspects of students' satisfaction with a discourse as a method of instruction.

Table 5.1.
The variance of original variables interpreted according to individual factors

Factor	Interpreted variance	
	Total (Eugen value)	% of variance
1	2.767	18.448
2	2.017	13.447
3	1.793	11.956
4	1.547	10.316
5	1.216	8.107
6	1.105	7.364
Total	10.446	69.639

The **Table 5.2** shows that:

1. **factor – *dissatisfaction, burdening aspect – impossibility of affirmation*** – is defined *by a stage fright due to public discussion, the dominance of the same students in discussions, preparations of students for each class* and *the preference of professor's lectures over discussion led by others*;
2. **factor – *exploratory component* –** defined *by freedom of expression, a possibility of expressing one's own personal opinion* and *possibility to get engaged in research work;*
3. **factor – *motivational component* –** defined by *interesting way of work, motivation for learning* and *the possibility of getting to the heart of the matter;*
4. **factor – *docimological component* –** defined by *an opportunity for better grades* and *the work of students is more appreciated;*

5. **factor – *pragmatic aspect* –** defined by *gradual knowledge acquisition* and a negative correlation with *it is interesting to work in a team;*
6. **factor – *team work* –** defined by the statement *it is interesting to work in a team* and a negative correlation with *better understanding.*

Table 5.2.

The matrix of factor loads of the aspect of satisfaction with a discourse

The aspect of satisfaction with a discourse	Factor					
	1	2	3	4	5	6
Discourse satisfaction – interesting way of work	-.182	.060	**.782**	-.237	-.195	-.019
Discourse satisfaction –learning motivation	-.378	-.003	**.531**	.093	.307	.110
Discourse satisfaction –better understanding	.256	-.257	-.349	-.023	-.343	**-.473**
Discourse satisfaction –freedom of expression	-.198	**.701**	-.066	.260	-.036	.139
Discourse satisfaction –possibility of expressing one's own personal opinion	-.212	**.624**	-.259	-.040	-.080	-.259
Discourse satisfaction –gradual knowledge acquisition	-.137	-.274	.006	-.030	**.692**	.186
Discourse satisfaction –enables research work	-.300	**.799**	-.020	.118	.157	-.171
Discourse satisfaction – opportunity for better grades	-.221	-.292	.215	**.655**	-.252	-.183
Discourse satisfaction – possibility for getting to the heart of the matter	-.217	.102	**.661**	-.404	-.277	-.221
Discourse satisfaction –students work is more appreciated	-.147	-.240	.179	**.744**	-.172	.092
Discourse satisfaction –it is interesting to work in a team	.181	.053	-.114	-.269	**-.488**	**.714**
Discourse satisfaction –stage fright due to public discussion as an obstacle	**.717**	.022	.092	-.127	.148	-.153

Discourse satisfaction – the same students are always dominant in a discussion	**.511**	.386	.137	.366	-.064	.278
Discourse satisfaction –preparation of students for each class	**.868**	.198	.270	.157	.060	-.027
Discourse satisfaction –preference of professor's lectures of discussion led by others	**.809**	.095	.279	.069	.133	-.133

A statement could be pointed out in the discussion of these findings that the first factor is defined by the statements of students referring to some of their negative assessments, i.e. they talk about a feeling of discomfort due to stage fright they are facing when they have to participate in a discussion, the feeling of shame about their colleagues' reaction, the fact that preparation for discourse classes is time-consuming, or that they prefer professor's lectures to discussion of others. It is not specified what the last statement refers to; as a consequence the interpretation of the statement could have a broad range, while in order to be more certain we should certainly carry out a separate research focusing on the issue. Having presented the previous analysis, we could conclude that the outline of forming of sets of discourse satisfaction elements is more neat and easy-to-survey, i.e. there are two clearly separate groups with the unambiguous structure of two opposite sides – dissatisfaction with a discourse on one hand and – satisfaction with exploration possibilities, on the other.

6. Factor analysis of reactions appearing in a discourse

Factor analysis of reactions appearing in a discourse was undertaken according to the method *Categorical Principal Components Analysis.* Having in mind the number of factors (principal components) and the percentage of variance explained by them, it has turned out that the solution with five factors is optimal.

Table 6.1.

Variance of original variables interpreted according to certain factors

	Interpreted variance	
Factor	**Total (Eugen value)**	**Percentage**
1	3.008	20.00

2	2.680	17.87
3	2.087	13.93
4	1.320	8.80
5	1.095	7.27
Total	10.190	67.93

Table 6.1 shows that the five factors together interpret almost 70% of variance of the reactions appearing in a discourse.

Table 6.2 shows that the factors are rather clearly structured and can be defined in the following way:

1. **factor – *examples, application* –** defined by *derivation of the characteristic features of phenomena according to analysis, interpretation of data in a new way, examples for theory argumentation, absence of discovery of new ideas, absence of attributing new meanings to data, absence of condensation of main ideas and analysis of theory;*
2. **factor – *creativity* –** defined by *discovery of new ideas, attributing new meanings to data, condensation of main ideas* and, to a lesser degree, *examples for theory argumentation;*
3. **factor – *comparison* –** defined by *the absence of conclusion making, notional analysis, argumentation* and *text comparison;*
4. **factor – *application* –** defined by *examples for application of concepts, the absence of perception of regularities* and *making lists of characteristic feature*;
5. **factor – *interpretation* –** defined by *conclusion making,* and to a lesser extent, *data interpretation.*

Table 6.2.

Matrix of factor loads of the reactions appearing in a discourse

Reaction appearing in a discourse	Factor				
	1	2	3	4	5
Discourse reaction – data interpretation	-.335	-.384	-.124	-.242	**.457**
Discourse reaction – deduction of phenomena characteristics according to analysis	**.679**	.438	.208	.070	-.172
Discourse reaction – interpretation of data in a new way	**.759**	.407	.108	-.017	.281
Discourse reaction – examples for argumentation of theories	**.555**	**.453**	-.026	.099	.036

Discourse reaction – conclusion making	.184	.050	**-.502**	-.167	**-.638**
Discourse reaction – examples for application of concepts	-.224	-.186	-.186	**.531**	.324
Discourse reaction – notional analysis	-.265	-.004	**.652**	-.296	.144
Discourse reaction – argumentation	-.090	-.043	**.795**	.048	-.125
Discourse reaction – perception of regularities	-.257	.417	-.106	**-.521**	.104
Discourse reaction – making a list of characteristic features	.048	-.163	.057	**.714**	-.026
Discourse reaction – comparison of texts	-.119	.010	**.804**	.073	-.239
Discourse reaction – discovery of new ideas	**-.558**	**.757**	-.039	.111	-.017
Discourse reaction – attributing new meanings to data	**-.553**	**.726**	-.048	.148	-.019
Discourse reaction – condensation of main ideas	**-.531**	**.681**	-.073	.156	.040
Discourse reaction – theory analysis and finding a way of its application	**.639**	.407	.037	-.044	.397

7. Satisfaction with a discourse and reactions appearing in a discourse

The correlation between the set of variables referring to the satisfaction with a discourse and the set of variables referring to the reactions appearing in a discourse has been examined according to correlation analysis. The **Table 7.1** shows that 15 pairs of canonical variables have been identified, with the first pair in rather high inter-correlation and the second and the third pair in medium inter-correlation. Having this in mind, only the first pair would probably be relevant for us; nevertheless it was necessary to check the relevance of canonical correlations given in the table 7.2.

Table 7.1.

Canonical correlations

1	**.715**
2	**.624**
3	.470
4	.387
5	.364
6	.324

7	.305
8	.231
9	.225
10	.173
11	.128
12	.100
13	.092
14	.073
15	.007

Table 7.2.
Canonical correlations relevance tests

	Wilk's	Chi-SQ	DF	p
1	**.021**	**733.740**	**225.000**	**.000**
2	**.218**	**288.830**	**196.000**	**.000**
3	.391	178.113	169.000	.300
4	.502	130.777	144.000	.778
5	.590	100.065	121.000	.918
6	.680	73.098	100.000	.980
7	.760	52.076	81.000	.995
8	.838	33.595	64.000	.999
9	.885	23.243	49.000	.999
10	.932	13.438	36.000	1.000
11	.960	7.678	25.000	1.000
12	.976	4.531	16.000	.998
13	.986	2.611	9.000	.978
14	.995	1.014	4.000	.908
15	1.000	.011	1.000	.918

The **Table 7.2** shows that only the two first pairs of canonical variables are in statistically significant correlation. For further statistical as well as other analysis, it is necessary for us to consider more closely the canonical loads of both variables.

Table 7.3
Canonical loads for satisfaction with a discourse

	1	**2**
VAR00001	.004	.034
VAR00002	.125	-.285
VAR00003	-.126	-.081
VAR00004	**.601**	-.072

VAR00005	**.435**	**.862**
VAR00006	-.078	-.098
VAR00007	**.994**	.047
VAR00008	-.097	-.006
VAR00009	.015	.028
VAR00010	-.087	-.156
VAR00011	-.160	.092
VAR00012	-.092	-.209
VAR00013	.032	.041
VAR00014	-.112	-.083
VAR00015	-.138	-.112

Table 7.3 shows that **the first canonical variable** representing the set of variables referring to satisfaction with a discourse is defined, before all, by ***freedom of expression*** (variant 4, see the list of variables), ***the possibility of expressing one's own personal opinion*** and ***possibility of taking part in research work.*** **The second canonical variable** is defined, in the first place, by ***the possibility of expressing one's own personal opinion.***

Table 7.4.

Canonical loads for the reactions appearing in a discourse

	1	**2**
VAR00016	-.046	.133
VAR00017	-.052	.183
VAR00018	-.117	.165
VAR00019	-.063	.100
VAR00020	.020	.021
VAR00021	.002	.001
VAR00022	-.010	-.039
VAR00023	.080	-.188
VAR00024	-.010	-.002
VAR00025	.322	**.850**
VAR00026	-.001	-.299
VAR00027	.038	-.141
VAR00028	**.991**	.016
VAR00029	**.904**	-.025
VAR00030	**.821**	-.025

It can be seen according to the **Table 7.4** that the **first canonical variable,** representing the set of variables referring to the reactions appearing in a discourse, is defined, before all by ***discovery of new ideas*** (variable 28, see the list of variables), ***attributing new meanings to data*** and ***condensation of new ideas.*** **The second canonical variable** is defined, at the first place by

perception of regularities. According to what has been said, it can be concluded that within the highly compatible canonical groups the variables from both set are identified referring to explorative attitude to learning (research activities, freedom of expression, personal opinion, on the one had and creative cognitive reactions, on the other) pointing to the fact that the correlation of these variables from the observed sets (satisfaction with a discourse and cognitive reactions of students appearing in a discourse) is significant for teaching through a discourse in higher education teaching, i.e. that a discourse as a method of instruction is most suitable for students who have emancipatory attitude towards learning, intrinsic motivation and learning techniques appropriate for exploratory approaches to learning.

8. Cluster analysis of the aspects of satisfaction with a discourse

Further analysis has examined previously identified links and correlations. Hierarchical cluster analysis of variables from the domain of satisfaction with a discourse has been done according to the method of between groups linkage. Quadrate Euclidian Distance has been used as a cluster distance measure.

Table 8.1.

Cluster analysis stages[1]

Stage	Connected clusters		Coefficients
	Cluster 1	Cluster 2	
1	14	15	13.000
2	11	13	27.000
3	12	14	28.500
4	11	12	37.833
5	4	7	39.000
6	8	10	41.000
7	1	9	44.000
8	4	5	64.500
9	8	11	67.500
10	1	8	75.714
11	1	4	87.370
12	1	3	94.750
13	2	6	97.000
14	1	2	110.115

[1] The numbers in the columnts *Cluster 1* and *Cluster 2* represent ordinal numbers of the variables from the *list of variables in cluster analysis*

The Table 8.1 shows that the analysis was carried out in 14 stages. At the same time, it can be seen that at the first stage the variables ***preparation of students for each class*** and ***I prefer professor's lectures*** are connected, explaining the statements of students who are not satisfied with a discourse. Namely, classifying previously mentioned variables under the same class shows that the students who state that they prefer listening to professor's lectures to participating in a discourse or listening to discussions led by others are actually not ready to regularly make effort in preparing for a discourse within teaching. What remains for some future research is to investigate if the reason for this is a lack of systematic work, i.e. the habit of unsystematic learning or something else, like the habit to receive ready facts that mainly should be memorised, thus forming a learning strategy. The fact is that these two variables are connected and that they can be interpreted as a lack of motivation for getting more deeply involved in the contents of learning, or, in other words, according to the adopted receptive-reproductive learning strategies. This implies that a number of students is still far away from emancipatory approach to learning and that they should actually "be woken up" through this or other similar teaching method. In the dendogram given in the text below this can be more clearly noticed, as well as the other previously identified correlations. It is also perceptible that the variables that can be described as statements showing dissatisfaction with a discourse (stage fright due to public discussion, feeling shame when facing the need to talk in front of others, the same students have a dominant role in participation in the discourse etc) are classified under the same category, which has already been suggested at the first steps of the statistical analysis. On the other hand, the variables expressing satisfaction with the possibility of having research approach towards knowledge acquisition, expressing one's own opinion, getting to the heart of the examined matter, freedom of expression are also undoubtedly grouped together, which has also been indicated by the former steps of the statistic analysis.

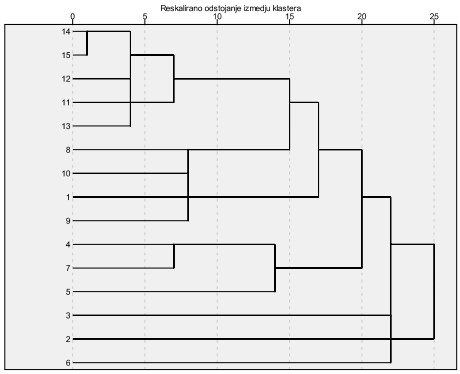
The list of variables in cluster analysis

1.Interesting way of work, 2. Motivating for learning, 3. Better understanding, 4. Freedom of expression, 5. Possibility of expressing one's own personal opinion, 6. Gradual knowledge acquisition, 7. Possibility of research work, 8. Opportunity for better grades, 9. Possibility of getting into the heart of the matter, 10. Work of students more appreciated, 11. It is interesting to work in a team, 12. Stage-fright due to public discussion as an obstacle, 13. The same student always dominate in discussions, 14. Preparation of students

for each class, 15. I prefer professor's lectures to discussions participated by others.

Graph 8.1.

Dendogram



For example, it can be noticed according to the dendogram that the cluster consisting of the variables 14, 12 and 11 is rather close to the variable 8, confirming the above stated correlation with the reactions of students, classified under pragmatic orientation.

9. Cluster analysis of the reactions appearing in a discourse

The same reasons permeated the need to carry out a verification of the previous findings according to the cluster analysis of the variables from the domain of the reactions appearing in a discourse using the between-groups linkage method. Quadrate Euclidian Distance has been used as a cluster distance measure.

Table 9.1.

Cluster analysis stages[1]

Stage	Connected clusters		Coefficients
	Cluster 1	Cluster 2	
1	13	14	9.000
2	3	4	18.000
3	13	15	19.500
4	9	12	39.000
5	3	5	43.000
6	2	3	47.667
7	10	13	58.000
8	8	9	75.500

9	2	10	82.250
10	7	11	94.000
11	1	7	99.000
12	2	6	103.625
13	1	8	106.444
14	1	2	112.556

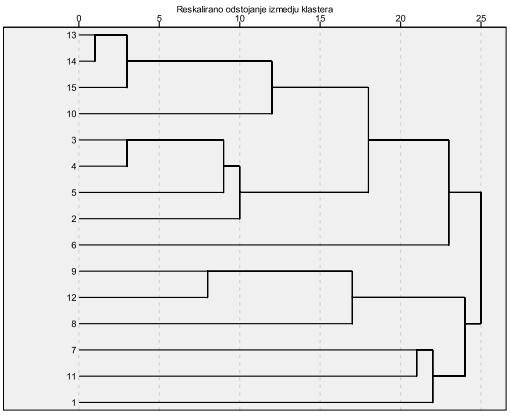
[1] The numbers in the columnts *Cluster 1* and *Cluster 2* represent ordinal numbers of the variables from the *list of variables in cluster analysis*

The **Table 9.1** shows that the analysis was carried out in 14 stages. It can also be seen according to the table that, for example the variables ***discovery of new ideas*** and ***attributing new meanings to data*** are connected in one cluster at the first stage, and that the variables grouped in the same sets as in previously done analysis (pragmatic, explorative, interpretative, etc) are further classified under broader clusters.

The list of variables in cluster analysis

1. Data interpretation, 2. Deduction of characteristic features of phenomena through analysis, 3. Interpretation of data in a new way, 4. Theory analysis and finding way of its application, 5. Examples for argumentation of theories, 6. Making conclusions, 7. Examples for the application of concepts, 8. Notional analysis, 9. Argumentation, 10. Perception of regularities, 11. Making a list of characteristic features, 12. Comparison of texts, 13. Discovery of new ideas, 14. Attributing new meanings to data. 15. Condensation of main ideas.

Graph 9.1.
Dendogram



For example, it can be perceived on the dendogram that the cluster consisting of the variables 13 and 15 is rather close to the cluster consisting of the variables 3 and 4, confirming previous statements, i.e. forming of a set that could be called interpretative.

10. Cluster analysis of the satisfaction with a discourse and cognitive reactions appearing in a discourse

Another step in statistic analysis dealing with the relations between a discourse as a method of instruction, i.e. the acceptance of the method by students and cognitive reactions appearing within it, as a confirmation of the efficacy of a discourse as a method, as well as a confirmation of cognitive categories the method convenes to, was to undertake hierarchical cluster analysis of the variables referring to the satisfaction with a discourse and reactions appearing in a discourse, according to the between-groups linkage method. Quadrate Euclidian Distance has been used as a cluster distance measure.

Table 10.1.

Cluster analysis stages[1]

Stage	Connected clusters		Coefficients
	Cluster 1	Cluster 2	
1	7	28	5.000
2	7	29	10.500
3	14	15	13.000
4	18	19	18.000
5	7	30	19.333
6	11	13	27.000
7	12	14	28.500
8	5	25	34.000
9	11	12	37.833
10	24	27	39.000
11	8	10	41.000
12	18	20	43.000
13	4	7	43.500
14	1	9	44.000
15	17	18	47.667
16	4	5	61.600
17	11	17	65.850
18	8	11	70.389
19	23	24	75.500
20	1	8	77.545

21	1	4	82.275
22	2	26	92.000
23	3	22	92.000
24	6	21	98.000
25	3	16	98.000
26	1	2	100.950
27	3	23	103.556
28	1	3	106.924
29	1	6	111.821

[1] The numbers in the columnts *Cluster 1* and *Cluster 2* represent ordinal numbers of the variables from the *list of variables in cluster analysis*

The Table 10.1

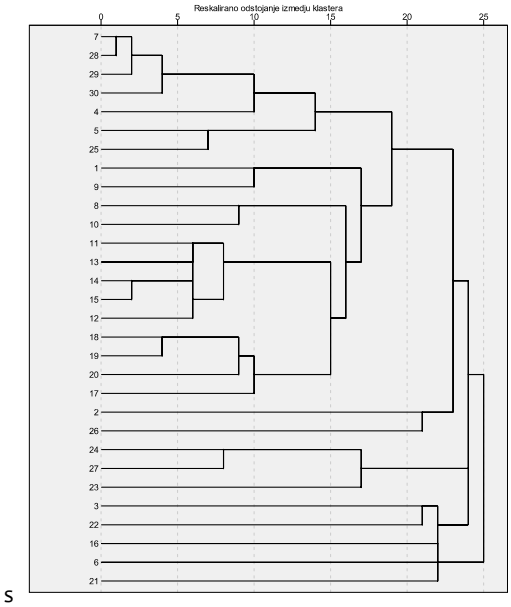
The **Table 10.1** shows that the analysis was carried out in 29 stages. According to the table it can also be seen that, for example, at the first stages the variables ***possibility for taking part in research work*** and ***discovery of new ideas*** were connected in one cluster.

The list of variables in cluster analysis

1.Interesting way of work, 2. Motivating for learning, 3. Better understanding, 4. Freedom of expression, 5. Possibility of expressing one's own personal opinion, 6. Gradual knowledge acquisition, 7. Possibility of research work, 8. Opportunity for better grades, 9. Possibility of getting into the heart of the matter, 10. Work of students more appreciated, 11. It is interesting to work in a team, 12. Stage-fright due to public discussion as an obstacle, 13. The same student always dominate in discussions, 14. Preparation of students for each class, 15. I prefer professor's lectures to discussions participated by others. 16. Data interpretation, 17. Deduction of characteristic features of phenomena through analysis, 18. Interpretation of data in a new way, 19. Theory analysis and finding way of its application, 20. Examples for argumentation of theories, 21. Making conclusions, 22. Examples for the application of concepts, 23. Notional analysis, 24. Argumentation, 25. Perception of regularities, 26. Making a list of characteristic features, 27. Comparison of texts, 28. Discovery of new ideas, 29. Attributing new meanings to data. 30. Condensation of main ideas.

Graph 10.1.

Dendogram



S

The dendogram shows the formed clusters clearly indicating that 6 sets of relations between satisfaction with a discourse and cognitive reactions of students within a discourse have been identified. Just like in the previous procedures of analysis, the most emphasized one is the ***explorative group*** (7, 28, 29, 30, 45, 26), closely connecting statements showing satisfaction with a possibility to research, as well as that within research discourse the following cognitive reactions were pronounced: ***attributing new meanings to data, condensation of main ideas in unusual and new way, possibility of expressing one's own ideas, thoughts...*** Even though from the angle of frequency the group is smaller, it still remains the most clearly expressed as a correspondent relation between the expression of satisfaction and cognitive reactions that could be classified under a category ***practical side*** (1, 9, 8, 10). Furthermore, the variables that could be classified under the category of ***dissatisfied*** were also grouped beyond dispute (1, 9, 8, 10), followed by the group manifested through the expression of discontent with a discourse (11, 13, 14, 15, 12); this is where it connects with the level of ***argumentation*** in the cognitive aspect (18, 19, 20, 17). Furthermore, other clearly grouped variables are classified at the stage of ***analysis*** (2, 26, 24, 27, 23) and at the level of ***application*** (3, 22, 16, 6, 21).

The names to the perceived groupings of the variables from the two sets are given according to the way the correlations between the variables

from both groups have been considered. What is significant to point out is that the groupings of the variables is carried out so that it could be easily noticed that the statements of students referring to their satisfaction with a discourse, i.e. their reasons for being or not being satisfied with it, are closely connected with the cognitive reactions appearing in a discourse. In other words, those who are satisfied with a discourse due to the fact that they can participate in research, express their opinions, have freedom in their presentations, can condense and represent ideas in a new way, as well as confront concepts and theories are classified within a set together with creative reactions of giving new meanings to data and concepts, discovering new ideas, etc. This is another confirmation of close links between students' satisfaction with a discourse and their cognitive reactions appearing within this method of instruction. What is the cause and what is the consequence of this was not a direct question of the research, however it can be assumed for a new step to be taken is that it is possible that cognitive characteristics, cognitive style, students' learning strategies and techniques are the cause of students being satisfied with a discourse as a method of instruction. Or, to put it more directly, students who are used to learning through reception were not motivated for participating in a discourse, they were not able to find positive feeling of satisfaction, while those who were satisfied with the possibility to get better grades, to learn gradually, etc. were not intrinsically motivated. There is a large group of students who express satisfaction with a discourse, but it remains at the level of understanding, application, conclusion making and similar cognitive reactions. This could mean that the majority of students do not have a well developed explorative spirit, i.e. that they are not used to search for information and that they learn for the sake of the exam, not because they are interested in a subject, etc. This could further mean that for this group of students it is necessary to make a lot of effort to be driven towards the strategies of learning implied by emancipatory didactics. One of the good ways to do this, at least the findings of this modest explorative research have pointed out, seems to be a discourse as a method of instruction, whose continuous and long-lasting implementation should bring to emancipatory spirit in knowledge acquisition.

Conclusions

Previous findings and their interpretation seem to lead to a conclusion that a discourse as a method of instruction in higher education teaching is well accepted, since the students expressed positive attitude towards it through their statements, i.e. a great deal of positive statements refers to

positive sides of a discourse as a method of instruction. Identification of certain aspects of satisfaction with a discourse does not mean that the same students are not satisfied with other aspects, as well. In other words, we have to have in mind that the students were in a position to state what they are satisfied with in a discourse, i.e. what they consider to be the advantages of the methods, as well as what they consider its shortcomings, not suiting them personally. Some of the students have expressed two and more positive or negative sides of discourse. The general picture of identifying the aspect convening to them is positive and refers to the satisfaction due to the classes being interesting, motivational aspect of a discourse, possibility to research, express one's own personal opinions and attitudes, etc. This very statement is sufficient for a claim that a discourse can be considered a suitable method of instruction at higher education level. Beyond this it could be concluded that participatory approach permeating a discourse as a method of instruction seems to be the reason for students' satisfaction, confirming the ideas of participative epistemology in approaches to learning and open way towards encouragement of autonomy and self-regulated learning, as basic elements of emancipatory didactics and cognitive functioning that should be characterised by flexibility, creativity, readiness for risk-taking.

Another conclusion refers to the findings of the factor, canonical and cluster analysis, confirming unambiguous and clear groupings of certain variables. They show that in a set there are closely correlated variables explicating the statements of students who are not satisfied with a discourse. Namely, grouping these variables in the same class shows that students who stated that they prefer professor's lectures to participating in a discussion or listening to discussions led by others are actually not ready to regularly invest an effort into preparation for a discourse within classes. What remains for some future research is to investigate if the reason for this is a lack of systematic work, i.e. the habit of unsystematic learning or something else, like the habit to receive ready facts that mainly should be memorised, thus forming a learning strategy. The fact is that these two variables are connected and that they can be interpreted as a lack of motivation for getting more deeply involved in the contents of learning, or, in other words, the adopted receptive-reproductive learning strategies. This implies that a number of students are still far away from emancipatory approach to learning and that they should actually "be woken up" through this or another similar teaching method. It is also easy to notice that the variables that can be described as statements showing dissatisfaction with a discourse (stage fright due to public discussion, feeling shame when facing the need to talk in front of others, the same

students have a dominant role in participation in the discourse etc) are classified under the same category, which has already been suggested at the first steps of the statistical analysis. On the other hand, the variables expressing satisfaction with the possibility of having research approach towards knowledge acquisition, expressing one's own opinion, getting to the heart of the examined matter, freedom of expression are also undoubtedly grouped together. All this implies that we are facing the need to in a new research focus more on the differences in student's cognitive styles, as well as their learning strategies and to what an extent they are important for the readiness of students to participate in a discourse.

The finding indicating the importance of the number of points expressing the success of students within a discourse, in the sense of achievement, leads to a conclusion that explorative abilities of students are significant for student success, having in mind that the students with more emphasized cognitive autonomy, research and creative approaches, as a rule, achieved higher number of points, i.e. they were more successful and had higher achievements. On the other hand, it has also been noticed that some other students who were not enthusiastic about a discourse as a method of instruction, also earned high number of points and reached high achievements. One of the angles to consider this finding could refer to cognitive style which, as a hypothetical construct with a broad range of abilities and personality features, is an indicator of idiosyncrasy, manifested here, underlying long known fact on the non-existence of a universal method, both from the aspect of aims and contents and from the angle of an individual. In other words, those students who expressed lower degree of satisfaction with a discourse, i.e. who rather pointed to their shortcomings, could also have realized a large number of points, investing efforts and meeting the imposed demands. What remains as a conclusion is that there is a group of students unambiguously identified as those who express satisfaction with a discourse due to possibility to explore, be independent, free, etc. and that they were actually those who manifested success in the form of creative and cognitive reactions. This could further mean that a discourse as a method of instruction suits them best and that other students need additional work in order to adopt strategies implied by participatory epistemology and to get closer to emancipatory aims of learning in higher education teaching. One of possible ways, at least according to the findings of this research, is a discourse as a method of instruction in higher education teaching. At it has already been pointed out, it cannot be considered a universal method, either from the angle of contents or from the angle of significant cognitive differences, learning strategies differences, etc.

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