Decoding the Disciplines in higher education institutions and democratization of knowledge to contrast the gap between cultures[1]

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Abstract

Decoding the disciplines is a European project under the framework of Erasmus + KA2. It represents the current stage of development of the democratic vision of teaching at the university level with the introduction of a dynamic sequence methodology, based on the understanding of the content of discipline taught and learned in classroom. All disciplines are involved: humanities, arts, sciences and social studies including citizenship education. The priority purpose is to understand what to teach from an academic discipline and to monitor students' learning and motivation, to bring out the bottlenecks, which hinder the achievement of knowledge and slow down the learning process leading to failure. Knowing how to teach at a university requires the integration of the new monitored European key competences. Not all university teachers have the opportunity to follow an adequate teaching education, nor can they directly verify their ability to know how to teach and communicate the knowledge and the epistemological character of their discipline. The growing disciplinary gap between teacher and students assumes the shape of progressive removal from scientific truth. The theory of humanistic Weltanschauung leads one to think of the qualification of a teacher in terms of responsible participation in building the identity process. The methodology in 7 steps refers to the impact of higher education on training in critical thinking (mainly in Belgian and Italian citizenship education) and notes the current important scientific acquisitions, with the eventual design of extension of the training of secondary school teachers. The project is coherent with the Council of the European Union of May 12, 2009 Conclusion, "ET 2020" and will use Open Educational Resources (OER). Decoding citizenship education will lead us to new horizons and challenges. Presentation of initial results aims to receive a feedback on our still in progress study or our work in progress.

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Introduction

The mission of the University is to prepare new generations to face the world in terms of knowledge and in terms of competences. The process of education intends to promote cultural progress and economic development in students who are able to build a closer relationship between knowledge heritage and improvement of living conditions. Political and social implications are part of the university teaching where it becomes urgent to adjust the agenda to the widespread idea of the European recommendations symbolised by the triangular growth of intelligence, sustainability and inclusion.

Students should be guided to the awareness of the assumption of their responsibilities towards mastery learning. The methodology called Decoding the Disciplines imported from Indiana University (USA) represents a new device on how to study, internalise, interpret and create solutions in learning and teaching process. Teachers, in schools and University contexts develop the capacity to teach students the discipline (any kind of discipline) using learning dialogue in a way that the lesson transforms itself into an existential project in which they will believe and to which they will commit themselves. It is a sort of revolutionary thinking perspective of teaching and learning. Teachers reassume their specific field of expertise and students invest in their skills to understand contents and methods.

Decoding the Discipline is an interactive teaching model, which can be realised in differentiated learning environments, humanistic, scientific and in digital technologies. The profile of the teacher using Decoding the Disciplines methodology centres on the ability to uncover bottlenecks and obstacles, encountered by the students in the classroom.

Human contact between teacher and learner allows students to express their difficulties regarding the object of knowledge of a specific discipline. This human contact sets up a significant educational relationship that results in successful preparation.

Relevant studies about the human factor in economics restore vitality and responsibility to the person recognising the top position of the human being, while monetary earnings is just the engine of change depending on the acting person (Levinas, 1987; Burggraeve, 1997). The international comparison of the applied methodology found in the Erasmus Plus project has proven the efficacy and consistency of the Decoding the Disciplines methodology.

Meaningful aspects of European cooperation on the theme presented in this paper aimed to change and develop superior systems of instruction and training in the sense of democracy and participation in sharing academic and scientific knowledge. Decoding the Disciplines is interpreted as a preferred path to cut down on university drop-outs and to prevent situation of study exclusion.

European goals and the question of academic world ranking

In the Agenda 2020 (called ET 2020), the primary goal of the European cooperation should be to support the further development of education and training systems in the Member States which are aimed at ensuring the personal, social and professional fulfilment of all citizens, and the sustainable economic prosperity and employability, whilst promoting democratic values, social cohesion, active citizenship, and intercultural dialogue (Council, 2009).

The contents are also part of the worldwide objective on the entire system of planet Earth and on the extension of employability in the international market. Young people are prepared to look beyond national borders and choose places of work, in which their competences can be fully recognised.

Europe 2020 emphasises three interconnected priorities: 1) intelligent growth that means development of an economy based on knowledge and innovation, 2) sustainable growth through the promotion of a more efficient economy from a point of view of resources, 3) inclusive growth intended to promote an economy with an employment rate high enough to support social and territorial cohesion. Three areas of action for achieving these priorities are indicated hereafter (Applica and Ismeri Europa, 2016).

The first concerns innovation and refers to European spending for research and development which was still at 2% in 2010 and, thus, below the percentages recorded for the United States (2.6%) and Japan (3.4%). The auspice for Europe is moving in the direction of increasing investments in the private sector and high technology.

The second area of action is education, training and lifelong learning and directs new attention to students with limited reading capacities, and youth who leave their studies at an early age (that is, 50% who have an average level of qualification that often does not meet the job-market requirement). Overall, in Europe, a university degree is obtained by less than one person out of three at the age between 25 and 34, whilst in the United States (under the same conditions) this factor is 40% and 50% in Japan.

The third area of action, towards which Europe is moving, is digital society, considering the fact that the global demand for information technology and communication represents a very extensive market in which the participation of European businesses is still scant, due also to the delay in the use of high-speed

internet. The slowness of on-line communication hinders innovation (particularly in rural areas), the spread of knowledge and distribution of goods and services.

Teaching as the learning environment

The *Times Higher Education* World University Rankings 2019 which was released on September 26, 2018, has revealed the world's top universities and indicated two British universities and one US university among the top 10 (Oxford, Cambridge and Stanford University). The five categories under which each university is judged, cover the core missions of all world-class, global universities: teaching, research, citations (research influence), industry income and international outlook.

The World University Rankings assumes that teaching is the most important factor in learning and developing knowledge. The crucial question concerns the students' learning environment at the university. It clearly appears that the quality of teaching depends on the quality of research in terms of production and transfer of knowledge. They cover about five performance indicators: reputation survey, staff to student ratio, the ratio of doctoral students to undergraduate students, the number of doctorates awarded per academic staff, and institutional income. The consequences of the five indicators are a high prestige, availability of facilities and resources of the teaching environment. Students receive a direct impact and learn effectively and efficiently.

A methodology for university teaching

The concentration of critical thought on the subject of study has led to working up the methodology of Decoding the Disciplines. The attempt to help students learn how to analyse, summarise and assess could create obstacles in the building of higher order thinking skills due to the gap between the degree of thought required in the classroom and the generic assumptions being introduced. To prevent and overcome these difficulties, the relevance in facing the issue within each special field of discipline is emphasised. The general reference structure represents the epistemological, cognitive and emotional framework of the process, completed through the specific, in-depth examination of the discipline.

Based on the research of John Middendorf and David Pace (2004, 2017), we can define a development typology of the new methodology in the academic world, starting with the studies of Shulman, Brown, Collins, Duguid, Tobias.

Lee Shulman (1987) maintains that teacher training must pass from general theoretical proposition to the study of learning in environments created by disciplinary teaching. Other academics (Brown, Collins, Duguid, 1989) talk about "cognitive apprenticeship", as the process of learning academic disciplines compared to learning various functions in a foreign culture.

Observations in the field (Tobias, 1992-1993) reveal the difficulties of expert educators and qualified students when transferred to inferior teaching environments, far from their own specific disciplinary competences. This is a clear sign that possessing the discipline requires adjustments to the environment that cannot be given solely in the form of the general theory of learning.

This defines the fundamental epistemological problem that one needs to try to dissect and comprehend on two analytical planes: the plane of theorised knowledge and the plane of the discipline taught. The questions that await replies are related to the structure of the knowledge and methods, with which the experts reflect in their own disciplinary field. The gap between what is assumed about the discipline and what the student learns constitutes a subject of investigation and in-depth scrutiny. At this time, there seems to be a certain convergence among the various disciplines in the sense that each discipline finds a separation between the culture of discipline of the teacher (supposedly very well-known) and the culture of the discipline of the students (supposedly very unknown). The humanities teacher and the science teacher face the abyss created between what the professor teaches and what the university student learns.

The learning process

Researchers, who are interested in studying the nature of the discipline and teach by monitoring the results of the students, show a great responsibility towards the social and cultural implications of teaching. They truly want to know what remains of what they teach, and the evaluation of the feedback relative to the mastery of the knowledge by the young people is considered an indispensable step towards improving the performance of both parties: teacher and student.

The often unsatisfied comments of the teachers about the way students give their feedback on the contents of the discipline heighten the search for quality of the educational offer. To improve one's own teaching method, one can start from various points. No matter what the case is, in order to scientifically study thought and learning, it is necessary to link the disciplinary knowledge to what occurs in the classroom. There are teachers with excellent knowledge, but who are actually unable to communicate the contents of their own discipline. There are also teachers who are not considered exceptional scholars, yet are experts in getting students to participate in a work plan, through which learning takes place in a natural, spontaneous, easy, painless, interesting and pleasant way. The attraction to the discipline is not only linked to the contents, but requires that bit of curiosity, without which the contents are learned solely for administrative purposes and are quickly forgotten. Not a remnant is left in the mind or heart of the student.

Based on the methodology, there are three principal assumptions that change student performance by establishing a new learning structure, which is characterised by interaction and dynamism among persons, knowledge, strategies and results.

The first assumption concerns specific disciplinary learning. It is found that every fact learned may be restricted to the individual discipline and may not concern all the disciplines. At first, it affects the specificity of each discipline and the disciplines neither overlap nor mix with one another. The second assumption concerns what students have to do and do not know. The concepts are derived from mental operations. The third assumption is represented by the fact that teachers provide some information and important passages that are necessary to understand the task.

The starting principles from the three assumptions are derived from setting up the decoding process, which is composed of seven steps of involvement that the teacher follows as a guide to each discipline.

The seven steps of decoding are: 1) identification of the problematic areas, the so-called bottlenecks (i.e., a place where many students consistently fail to master crucial material), 2) definition of the mental operations deemed crucial for training students to complete the assignment and, thus, overcome the bottlenecks, 3) modelling the passages, going into detail of what to ask the students, 4) preparing the steps that the students have to perform in practice and provide feedback on the process, 5) examining the reasons and the emotions of the students, so that they go through the decoding process and realise the difficulties, 6) analysing student mastery of the course through appropriate assessment tools, 7) sharing what has been learned.

The steps are presented as a general structure for confronting the general problems of learning and are not an inflexible model to be applied dogmatically. In fact, the sequence may change, depending on the situations being examined. For example, one could actually start from the second step rather than the bottleneck and continue with the sixth step, then return to steps three, four and five. Sometimes the seventh step of sharing, and even the fifth step of reasons, have to be put off. These decisions concern the category and method of applying the paradigm. In any case, the crucial issue is attention to what must be done to allow the student to be successful in the university course. The presence of trained tutors and constant supervision are essential for the success of the entire process.

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