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Metacognitive analysis of mental categories. The implicit beliefs of the students of the Epistemology Course of the Master in Formation, Communication and digital citizenship

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Abstract

The aim of this research is to understand the mental states of the students attending the Epistemology Course of the Master Formation, Communication and digital Citizenship (University of Ferrara), around the following thought categories that represent fundamental tools in order to start a metacognitive process (Annable, 2012): Knowledge; Rationality; Emotion; Freedom; Formation. At this end, a questionnaire was given and analyzed in the light of a qualitative methodologic orientation.
Together with Margiotta (2015), we think that the convictions around the identified categories, influence students' approach toward learning. Consequently, it is useful to know these kinds of representations in order to formulate a more efficient educational proposal, that is more aware about the receptive and elaborating features of our young interlocutors (Ryken & Salganik, 2007). It exists a correlation between cognition and implicit epistemology (Santoianni, 2019), this research wanted to make explicit some of its fundamental structures.

Lo scopo di questa ricerca è comprendere gli stati mentali degli studenti del Corso di Epistemologia della Laurea Magistrale di Formazione, Comunicazione e Cittadinanza digitale (Università di Ferrara) intorno alle seguenti categorie di pensiero che rappresentano fondamentali strumenti concettuali per avviare un processo metacognitivo (Annable, 2012): Conoscenza; Razionalità; Emozione; Libertà; Formazione. A questo fine, è stato somministrato un questionario analizzato alla luce di un orientamento metodologico qualitativo.
Con Margiotta (2015) riteniamo che le convinzioni intorno alle categorie individuate condizioni l'approccio degli studenti nei confronti dell'apprendimento. Di conseguenza è utile conoscere tali rappresentazioni al fine di formulare una proposta formativa più efficace in quanto più consapevole delle caratteristiche ricettive ed elaborative dei nostri giovani interlocutori (Ryken & Salganik, 2007). Esiste una correlazione fra cognitività ed epistemologia implicita (Santoianni, 2019), questa ricerca ha voluto rendere esplicite alcune sue strutture fondamentali.

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Parole chiave: epistemologia implicita; conoscenza; formazione; metacognizione; apprendimento

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There are few tasks more urgent than
that of designing the infrastructures that promote learning.
Those who will be able to understand the "informal character"
but also structured, experiential but also social of learning
-and those who will be able to translate their own ideas in project to serving
of learning- will be the architects of our tomorrow.
Wenger, (2006, p. 225, auth. trans)

1. Introduction

The survey we present aims to understand the subjective meaning attribution that students exercise around the conceptual categories most transversally used during the Epistemology course. We are thinking about the epistemological beliefs, or rather the opinions about the origin of knowledge, its organization, its sources and its reliability. These beliefs act in the way of thinking, so they affect not just in the way of study, but also in the daily behavior. The relation between behaviors and cognitive styles of our students, such as the one between knowledge theory and learning approach, are inherent to the structuring process, demarcation and composition of the cognitive field. This is the starting point. In fact, we believe that the ability to think about one's conceptual category is the prerequisite to initiate a metacognition process. From here, the attempt to promote, on one side, the reflexive and transformative skills, and on the other side, the comprehension of our students' nature of cognitive orientations.

The meaning assigned to Knowledge and, in general, to Education is really far away from the ones we assign as teachers, because students' learning style is strongly affected by the socio-cultural contest created by the new technologies. In this specific learning environment, guys start the building process of their own identity and, with it, of their own cognitive field.

From that, the importance of understanding students' beliefs around their own mental configuration. It is precisely the implicit epistemology, that is the meaning that guys give to knowledge that influences the dynamic of their learning. The idea that young people have about education, about its process and purposes, depends on their self-cognitive, that is the conceptual domain where the same mental representations act. In this sense, this conceptual domain represents the base for the organization of a large part of cognitive activities. For this reason, is really important to understand students' beliefs, because of the active role they play in the construction process of knowledge. The cognitive-self is structured around the attituded that the subject expresses toward learning and its motivations, toward imaginary of formation, fantasies, wishes, emotions, expectation of gratification or not about the achievement of educational goals (Zohar & Dori, 2012). The perception of ourselves, represents the foundation for the cognitive organization, that for sure it depends on the explicit dimension of one self, but it cannot be reduced to this only dimension. Consequently, this fact is really important during the optimization of the mechanism of learning, because it can be strategically useful to reconfigure contents and methods in new and more competent associative nets. In short, the exploration, the awareness, and the clear perception of one's cognitive self, help to structure the conscious, to organize associative nets, to improve logic links. In fact, how can we negate the fact that ideas we have about our mental process influence the construction of knowledge, the elaboration of cognitive strategies, the memory it-self? The implicit ideas, even when they aren't completely connoted or conscious, act in our way of learning. From that, the strategic relevance of know the Knowledge (Morin, 1989).

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2. Motivation and identification of the problem

The generation gap caused by the massive use of the new digital technologies and the increasing index of complexity in the social structure of the Occidental countries, is an educational emergency (Bencivenga, 2020). We are witnessing to an intergenerational communication difficulty that alarmingly affects the formation story of young generation (Biscaldi, 2018). On the other hand, this difficulty is also caused by the low social esteem that families express toward school and university (Chomsky, 2019; Galli Della Loggia, 2019). We are living a systemic crisis whose entity isn't totally clear because, since it attains to implicit epistemologies (Annacontini, 2014, p. 89), it's, in one way, subterranean.

Today, more than ever, studying the anthropology of new generations is very important, in order to analyze the specificity of their educational needs and, as a consequence, elaborating an efficient educational proposal for the challenges of the contemporary world. The study we present, identifies some of relevant guidelines of the young mentality. The individuation and the analysis of the elements that characterize the implicit epistemology are fundamental to orient the construction processes of knowledge, as much in teaching as in learning.

The **goal** is understanding if and how much the Epistemology Course has encouraged some metacognitive competences. We have tried to favorize an introspective and self-reflexive attitude, that promotes the consciousness about learning processes both implicit and explicit. The investigation has the purpose to analyze young's mentality in order to intercept prejudices around very important questions both for the studies they chose and for the job they want dedicate to.

Contents. Therefore, we try to highlight the beliefs, often not completely conscious, with regard to the sense of the educational phenomenon. In particular, we identified these semantic topics that are transversal to the Course:

1. The relation between knowledge and experience;
2. The relation between rationality and emotionality;
3. The relation between mind and education.

Because of their educational implications these topics are connected. The invitation we extended to students implements a first essential self-reflection process through an applicated hermeneutic practice. Students wondered about the authentic sense of the proposed relations starting from their implicit ideas. Then, we started analyzing the given questions with their answers.

3. The epistemic context and the theoretic framework

The first scholar who faced a systematic study about the epistemological beliefs was Perry (1968), postulating that changing in configuration of the implicit ideas means the achievement of a higher competence level in the cognitive process. Recently Magolda (1992) showed the relation between learning styles and implicit epistemological thesis and, consequently, the expectations toward oneself, toward companions and teachers.

The relation between learning and competences, has been analyzed by Dewey (1936) and represents, even today, a strong scenario to refer to this kind of study, such as Gardner (2006) for his reflections about mind's education and, above all, Margiotta (2015) for its studies about metacognitions. Starting from that, emerges an idea of competence as a potential with a strong generative and transformative power. Its implementation predicts the building of a reflection about oneself thought's structures. Self-hermeneutic and self-reflection are that kind of self-determination's technologies already illustrated by Foucault (1988; Salmeri, 2021). Finally, Bateson (1979, 1997) had already explained that our thought's epistemological structure determines the questions we ask for

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and the procedures we use to find the answers, to build solutions for the problems, to elaborate new ideas, to teach and to learn. The epistemic framework that supports this research is based on a hermeneutic approach to knowledge, here conceived as a relational, multidirectional, transformative process. In this scenery, we can find the constructivist and cognitive theory of learning (Bruner, 2000). Any learning is considered a construction because it works a structural, complex and deep change in mental representations' configuration such as in their complexification.

For metacognition we mean the capability to think about oneself intentional emotional agents that can monitor own mental states, thoughts or emotions. This is the prerequisite to identify the relation between mental representation and cognitive behaviors. As a frame of this argumentation, remains the concept of the Theory of Mind, that is the capacity to represent mental events, that has implemented the studies around metacognition since the nineties. From the point of view of the epistemology of formation, the educational goals concern the self-reflections (reflection around own mental states), the decentralization (reflection about others' mental states) and the monitoring (control). Comforted by this full tradition of studies, we are convinced that metacognitive functions play a crucial role during people's existence. In fact, the capability to think the thinking during the process of building knowledge, helps subjects to modulate their own learning behavior. So, from the end of XX century to nowadays, the essays about metacognitive strategies have enriched and they well specify the theories already formulated around the Theory of Mind (Cornoldi, De Beni, & Gruppo MT, 2001). In the end, learning process' optimization needs an epistemological preparation because knowledge isn't the simple reception of information, but its elaboration. Elaborating information involves the capacity to identify and trigger meaningful relations between people and areas of knowledge, between languages and cognitive attitudes, between different fields of knowledge, between the old and the new. It is required to know how does the thought act during the process of building knowledge. According to Margiotta, we can talk about "sophisticated metalinguistic instrumentation that sustains the investigation about concrete phenomena of qualification of learning" (Margiotta, 2015, p. II, auth. trans.), and this is, according to him, the scientific nature of pedagogical knowledge.

4. The qualitative methodology

The concatenation of questions asked in the survey focuses on the relation between phenomena. In fact, the qualitative method emphasizes the relation between the elements that compose the problem we are studying. Therefore, our methodology, even if it uses quantitative data, refers to a qualitative setting, that considers the numeric data in the systematic relation with the contest (Poletti, 2020).

The epistemic and consequently methodologic assumptions of our research are:

1. The parameters by which we evaluate the impact that Science of Education students' beliefs exercise on motivation and expectations.
2. The epistemological assumptions, even the implicit ones, of procedures that have a hermeneutic, quali-quantitative character.
3. The methodological coherence with these assumptions.
4. The conceptual instruments, the theoretical framework in the international debate around the implicit epistemologies.
5. Theoretic framework: constructivism and cognitivism.
6. The criteria of a constant revision of research's model and its own strategies: coherence and consequentiality.

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7. The verification and evaluation instruments about the results of our research in relation with the goals, the premises and the tools we could use: clarity of data and their coherence with the expected results.
8. The coherence between these elements and the possibility of a readjustment of research's design during the process.

The sample concerns all of the attending students of the Course: 25, which correspond to the 80% of the members. The prevalent gender is the female one with 21 on 25 and we didn't find correspondence between gender and beliefs.

5. The activities

After explaining the epistemological sense of the metacognitive practice, we gave questionnaires with open and closed questions. Then, we discussed the answers and gradually monitored the following exercises, stimulating the students to generalize the strategic learning to new situations. During the discussion, we invited students to recognize passages and movements that the mind creates during the studies and learning processes.
In the context of 'Epistemology and formation of technological rationality' course, which is part of the curriculum of the master 'Formation, communication and digital citizenship', in Ferrara's University, was carried out a laboratory in order to promote the self-hermeneutic practice. In fact, students are invited to think about the meaning of concepts proposed in pairs, write it at a rate of their personal experience, highlighting which is, according to their opinion, the link between the pair of words. We proposed the binomials in groups of three and they had 15 minutes for each semantic group. The fact was giving personal and intuitive answers, that could bright out their beliefs.
Here the proposed binomials:
Group 1

1) Knowledge- Experience
2) Mind – Brain
3) Intelligence – Emotion

Group 2

1) Education – Formation
2) Technology – Learning
3) Rationality – Spirituality

Group 3

1) Logic – Art
2) Freedom – Know
3) Utility – Study

How did we identify the couples? These are conceptualizations whose semantic spectrum (the relation based on the difference) gave us useful information about students' perception. This choice is coherent with the epistemological framework that has a hermeneutic nature, that identifies specific categories through which have the possibility to interpret the phenomenon. Again, the qualitative approach, that privilege the relations inside the phenomenon and between the phenomena in a systemic perspective, is coherent with the epistemological hermeneutic framework, which considers the interpretation the key element to understand the problem.
This kind of exercise give us the possibility to work, at the same time, about three important aspects:

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(1) Permit us to put into practice a self-hermeneutic exercise, that allow us to reflect about how we organize our thoughts, about the deep meaning we give to words and about the implicit beliefs we use to create an illustrative map of reality.
(2) Permit us to compare the way knowledge is built today and the way it was built in a different context, far away to the technocratic present.
(3) Permit to students to get to the heart of the theme of the Course, promoting an active teaching, that favorize the authentic meaning of epistemology and its important implications. Keep reasoning about the meaning of the words often superficially used, represents the opportunity to experiment, firsthand, *how* we think and, consequently, *how* we act.

The attending results will give us the possibility to elaborate our teaching proposal based on students' beliefs, in order to make beliefs explicit and help students to problematize the issues. In the end, we'll have important information about learning's motivations and about students' expatiations towards the Course and professional perspectives.

Evaluation. The research project has been evaluated in the light of these criteria:

1. Coherence between objectives, assumptions and used categories;
2. Between these elements and the possibility of their rearrangement during the investigation;
3. Achieving of expected results.

In the light of this verification, the positive evaluation makes us induce to present this report, in order to its publication.

In fact, during the preparing of the research design, we clarified the epistemological assumption, even implicit, of the procedures we used formulating the questionnaire, its distribution, its collection, its documentation and information's analysis. For this purpose, we evaluated, step by step, the operational congruence of our heuristic behaviors related to a dynamic, reticular reference system (Morin, 2007).

Besides, the problem of 'naïve theories' about learning has already been highlighted by Bruner (2000), who however referred to teachers, but here is important emphasize the conditioning that commonsense plays in educational processes.

6. Description and analysis of data

Once have collected the data, we started the analysis of the definitions they gave to the couple of words. According to our methodological choice, we used a qualitative approach in order to give the most correct interpretation of students' thoughts. In particular, we tried to identify the way in which students connect the words, trying to bring out the implicit epistemological approach, through a careful reading of the descriptions they made about the proposed concepts. Starting from this premise, we tried to understand and correctly interpret students' typical posture when they face reality, their attitude, their own implicit. In the following paragraphs, we'll expose some extracts from students' documents, sharing what emerged couple by couple.

The relation between Knowledge and Experience doesn't clearly emerge during the initial activities proposed to students. Everyone identifies the meaning of both concepts, detecting the abstract nature of the one, and the concrete nature of the other. Well, these would be different processes but in reciprocal relation, even if this connection is still implicit. Everyone, in different ways, affirms that "processes are connected together", or "the link is dual and bivalent, because there couldn't be knowledge without experience and vice-versa", without, anyway, clarifying the epistemic reason: "you actually know something, when you directly experiment it on field". In this context, it is described a kind of circular relation that couldn't identify the specificity of each

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process: "experience produces knowledge useful for the experience", "More I know, more I expand my experience. More experience I have, more I expand my knowledge". Each student observes that while Knowledge concerns to notions (above all, but not just, the school ones) experience concerns a practical knowledge: "knowledge understood as knowledge acquired both school and personal, experience is knowledge experimented on things", " knowledge concerns the theory of mind, while experience concerns to the practical", "experience is a source of information", "it is in the practical moments where we can learn new information", or "in my opinion knowledge is based on simple notions acquired in school context, while experience is everything we actively do or we undergo with our daily actions in our contexts", " experience represents subject's practical component that knows the world".

Also, in the relation between Mind and Brain isn't clarified any specific determination, only in one case it is recognized that "based on what mind encloses our brain is created: it is an organ that permits the activation of specific receptors that allow us to learn or to make links between different experiences". Anyway, it remains a general confusion about the meaning of both of the concepts, as emerges from this declaration: "The brain is commonly associated to a scientific organ". Here, too, is highlighted the different nature of the two words, between the abstract of the thought and the concrete of the experience, as it was evident from the reflection of the previous binomial. "Mind is a set of less rational, in which inside I see emotions, feelings, wildness. Brain: a more rational part". Everyone declares itself sure of the inseparable link between these words: "the brain favorize mentalization processes which create a mind"; "mind and brain influence each other and work together to let man live and relate in the world". Only three definitions explain "mind is that space where reside the thought, the brain is its physical structure" and the relation: "Mind intended as brain's work product in relation with the environment in which it is".

In the relation between Intelligence and Emotion is reaffirmed, again, the same definitory pattern theoretical/concrete, where the intelligence follows the abstract thought and it would be "more rational", while emotion would concern the instinctive impulse and it would be "more subjective". They are two separated and contrasting entities: "they base on opposite dimensions", the one would be "a quality" self-control's object, the other, the emotion, "a state", results of a less "governable" spontaneity for the intelligence, even unconscious, closely linked with to "the sensation". In the majority part the exercise of an "emotional pedagogy" it is recommended, in order to promote the "emotional intelligence".

We can find the same reasoning in the couple Education/Formation where the first concerns the person, and the other, specifically, to school or work. Formation "refers to the objective part of the know", it would be "more rational and pragmatic", in addition, "follows to competences and aims to get the performance better" and "it is more specific", it would represent "a more advanced state of education". It would be more linked to more "mature" knowledge, and "the formation consists in paths built *ad hoc*". Education, instead, "there's always", "it transmits rules of life, values", "it structures the subject from an emotive-behavioral point of view". The one would help the other because "both help the subject to mature oneself", but it isn't clear neither how, nor why.

The binomial Technology/Learning is the only where the relation appears as ontological: "technology makes me think about a set of tools, learning to the way by which contents are assimilated and elaborated". Today, according to students' opinions, there couldn't be a good learning without a correct use of technology: "technology encloses all the informatic knowledge and devices, with the technology is identified a new practical element inside the knowledge". Critical and competent use is recommended. Nevertheless, the opposite temptation reappears: "technology is the tool for the solution of practical problems. Learning is a set of skills and behaviors; it is a process of knowledge acquisition."

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The reflection about the relation between Rationality and Spirituality reposts us to the same dichotomic thinking style that, here again, escapes from the consequentiality principle. In fact, there wouldn't be a substantial difference, "they are way of thinking", or they would be opposite: "the first favors the reason, what we can scientifically see and experience. The second doesn't exclude the first a priori, but it finds refuge also in thoughts, other beliefs that could be excluded, set aside. The one is "something objective", because "the rationality indicates the sphere of practical and conceptual knowledge that let you solve a concrete problem. It is based on facts." The other: "with spirituality we refer to elements that characterize religious and philosophical shapes". Well, here the context is evident: "spirituality and rationality are one the opposite to the other". The relationship is openly declared as entirely divergent: "where there's rationality there isn't spirituality, where there's reason there isn't faith, they can't live together", so it is necessary find "the right balance between the two: spirituality gives the green to start the action; rationality allows us to evaluate and perform actions without hurt the other".
The logic that describes the binomial Logic and Art is the same: "Logic has a rational dimension, it is determined by rules and it responds to problems on time, art is a thought's deep dimension, it isn't linked to reality and isn't determined by rules, but it's based on unconscious, on oneself free expression". We can deduce that thought's deep dimension wouldn't be rational and wouldn't be determined by rules and, from what has been said, it would be free. "Logic is logos, so the correct reasoning", "art refers to personal, subjective faculties of the person", "that leads you to escape from borders, to go over the static thought, guided by the canon of real thought". Here again re-emerge the explicit dichotomic pattern: "logic is rationality's expression and reasoning". When it is recognized that art has its own logic, it is admitted that who follows this kind of logic, can't understand it. So, here we encounter more defined and clear positions.
Instead, some uncertainties and confusion come back in the relation between Freedom and Knowledge: "freedom doesn't permit constrictions" and again: freedom allows to live "without being bound and manipulated". "Freedom is one of human rights... with Knowledge we can reach freedom, understood as freedom of choice" and, for this reason, everyone identifies a relationship of necessity: "Knowledge makes you free", "freedom acts where know permit us to be conscious of our actions". Here, again, emerges the logic of contrasts: "Freedom is the possibility of disengaging from reality rules in order to form a personal thought. While Knowledge is predetermined". Freedom would be a "sensation", Erudition is "Knowledge", the first refers to the emotion reign, while the second to the reason one.
In the end, about the relation between Utility and Study, emerge a pragmatic conception of knowledge: "Study can be useful because permit me to acquire competences that I can put into practice", "it is useful what permits me to solve a concrete problem through logic and rationality, used as technology tools", "Utility is what can be useful, while studying is the learning application. Studying can be useful in the application and in the deepening of specific arguments". Again, "currently, useful know overpowers a more competent one because it would be more immediate and easier to reach".
Anyway, we can also find observations about the metacognitive value of the study: "a study is useful when it promotes the developing of the subject and when it gives information, methods and strategies that can be used also in other contexts" and with an existential character: "we are led to study what we thig it is useful for our life path". Again "knowledge allows us to well organize our concrete experience. Allows us to give concreteness to the sense research implemented through knowledge processes. All based on an interpretation of theoretical constructs. The link is the hermeneutic approach".
In general, these are the lines that define students' implicit epistemologies: definitions of the proposed concepts are articulated in a dichotomic way and follow the concrete/abstract pattern. The obtained results, make us

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think that the dichotomic reasoning doesn't depend on the binomial proposal. Their relation is never expressed in a clear way, above all epistemic implicit beliefs, the not-consequentiality principle isn't respected.

These results give us information about students' posture toward knowledge and toward the way in which they organize the thought, as it will be explained in the next chapter. We'll see that at the end of the course, during the debate about each analyzed couple, we'll emerge more aware and more articulated positions about their mental patterns.

7. Conclusion

During the discussion at the conclusion of the Course, all of the students admitted they had a lot of difficulties to 'put pen to paper' the meaning of concepts they thought they had in mind. But they actually couldn't define precisely. The only binomial in which they didn't show any kind of hesitation concerns the role and the function of the relation between Technology and Learning.

The reasoning pattern expressed by students has an oppositional nature, not sequential: if, on one hand, the identified phenomena by binomials seem hardly separable in their semantic, anyway, we can find opposite features. Despite the proposal to define concepts on pairs, we think that the dichotomous answers of the students respond to the need of simplification, in order to avoid the shades of meaning and the complexity generated by this kind of exercise. Students, urged to identify the relation between binomials, seem to increase the initial discomfort. It is paradoxically recognized a co-constitutive connection between contrasting and not distinct phenomena. Our students have a language more suitable to identify and describe oppositions instead of recognizing the semantic links. They prefer defining then relating. The logic consequentiality isn't an argumentation's criteria.

In the light of the results of our research we can confirm the theoretical assumption that Knowledge can't only concern the acquired know because it refers to its implicit cultural framework. Consequently, teaching means setting up contexts that promote cognition through targeted interventions. The first step of this setting was the analysis of our students' implicit beliefs, both social and cognitive (Pignalberi, 2018).

In short, we helped our students understand how they represent the contents of their Course of study and how, with the hermeneutic applied activity we proposed, they can elaborate more efficient representations of cognition. During the debate that followed the analysis of their reflections, it emerged the importance of reasoning around the meaning of Knowledge and Education, but also around existential questions. At the end of Epistemology of Formation and technocratic rationality Course, the debate around posed questions and their answers revealed additional answers about the relation between the idea of knowledge and learning patterns that, in turn, showed the necessity to think in a critic and project way in contact with digital languages. In fact, in addition to promoting the self-reflection and the awareness about mind's activity, we activated monitoring processes trhough the discussion and the analysis of proposed activities, their models and the answers they produced.

In most cases, after 30 hours of lessons, activities and discussions, we verified that everyone, with different complexity levels, reflected about their learning approach, identifying resources and critical issues. We can affirm that the proposed activities encouraged students to think their though, representing its features and projecting its improvement. It is about the declarative and project demonstration of a cognitive process, that leads everyone to make complex oneself learning approach (Mentkowski, 2000). Our research shows that metacognitive exercises proposed to students motivate them to study and discipline.

Our cognitivist and constructivist reference epistemology, coherently to a qualitative approach and through a proposal of applied hermeneutic practices, founded our model, both in the formulation of the project and in the predisposition of activities (questions administration, discussion and self-reflection). During the search

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path, we felt the necessity to explore the context reflection between us as researchers and, at the end of the course, with the students as well. We could verify that the proposed activities have revealed students' elaboration around their idea about listed mental categories. We also could verify that this result enriched and reconfigured our own initial perception about their difficult in reconfiguration refection's spaces. In fact, on the contrary to what we expected, students' interest toward a proposal that could initially result abstract because different from their request of concrete and pragmatic learning (Rossi, 2019), progressively increased. In our valuation we due this data to the prominence they could express with more and more trust in their own capabilities. But also discovering that the epistemology has a concrete dimension that they didn't expect before the starting course, had an important role. At the end of the course, students affirmed they have learned to orientate in thought's contents and strategies, in predisposition to learning patterns and, above all, in monitoring in progress their study activity's efficacy with more awareness. In the end, we could identify some guides that establish a new cognitive anthropology of boys and girls that are facing with an Epistemology Course during their Master path. We can affirm we reached our goal, anyway, this study shows that, in the light of these guides, we can well organize the administration and the formulation. For this purpose, we think we'll pursue the research in order to investigate other mental categories related to the ones we've already identified that results, according to a first analysis, of major importance, regarding motivations to study and professional expectations.

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