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STRUCTURING INFORMATION FOR THE CREATIVE PERSONAL PRESENTATION OF STUDENTS IN MANAGEMENT

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Abstract — The purpose of this article is to propose a pedagogical framework that helps the student to conceive an individual approach for the elaboration of a creative and adapted personalized professional project throughout the life. The state of the art on the design activity and its creative characteristic allow us to justify the setting up of a scenario in which students design instruments. We propose the progressive conception of mind maps to encourage a personal reflection process of students in management. This type of exercise allows students to set up personal learning strategies by developing and organizing the contents studied.

Key Terms — mind map, design, creativity, student project

Within the framework of the professionalization and integration of students, the university is called upon to assist them in the construction of their personalized professional project. The approach developed by the institutions is quite varied depending on the skills and human resources available. Thus, different pedagogical frameworks are proposed, but all consider that the student in management must find the tools to become the actor of its course. However, there are many students who have no training project or job, and who, for lack of support in their thinking, find themselves in check.

Today, technologies evolve and allow not only to use software previously designed to meet needs, but also to develop customized methodological tools: document and presentation templates, etc.

This work, therefore, presents a support system whose objective is that each student builds his digital instruments to design his approach to project construction. The project of the student is individual and dynamic, it is built throughout life and must adapt to different internal variations (age, experience) that transform knowledge, professional skills and soft skills and external variations (evolution of trades, economic context). The approach must be personalized and creative (adapted as needed) to prepare for adaptation to new contexts in the future. The project is built from a compromise between what the student wants and what is possible. It is essential that students improve their knowledge of themselves and of the socio-economic environment that surrounds them.

In this configuration, it is necessary for the student to develop a project building approach, to know how to make compromises from the synthesis of information, to know the tools of analysis of oneself and the environment that surrounded.

If we consider the student as the designer of a project-building process, we need to focus not only on the product design process but also on its use. Thus, in the first part, we refer to theoretical elements relating to the design process; the second part concerns the tools that can be used to support this approach so that it can be reused throughout life.

Design can be defined as an individual and collective activity, finalized by the product development project and the result of which is difficult to predict. Thus, the design is associated with an ill-defined problem-solving activity [11; 63]. Buchanan talks about user-centered design – particularly interesting in our case – as designer and user collaborate to achieve the goal. The main idea is the participation of the end user (student in

management) in the product design process: the user is integrated into the design team. The process steps are process planning, understanding and explaining the usage context, user and organizational requirements, producing design solutions, and finally evaluating solutions in terms of predefined needs. For each step, methods are recommended to better define user characteristics. This approach of the design seems interesting to us, in our study, because the students are the designers but also the users of their personal project. In fact, they design their own product [2; 10].

Fisher, Giaccardi, Sutcliffe and Mehandijiev defined the concept of meta-design in which a group of individuals conceives a product for itself. Meta-design characterizes objectives, techniques, and processes for creating new media and environments allowing “owners of problems” (that is, end users) to act as designers. A fundamental objective of meta-design is to create socio-technical environments that empower users to engage actively in the continuous development of systems rather than being restricted to the use of existing systems [6; 35]. The designer is the user. Therefore, we can consider students perform a meta-design activity when they think and design the process for the construction of their project. The student's project is here an instantiation of the approach, the latter having the function to apply at any moment of life.

If the goal is that the product is tailored to the user's requirements, then the design process should involve the implementation of a creative activity. Indeed, according to Lubart, creativity was viewed as a complex ability leading to idea production. Divergent thinking, but also analytic reasoning and evaluative thinking are all involved. Creativity and learning are related in several ways. First, creative thought may contribute to a person's learning process as a mechanism of knowledge construction. Learning, to the extent that it involves actively building a network of interrelated ideas, discovering or re-discovering concepts and principles, is itself a creative act at the personal level. Individual differences in creativity can, thus, contribute to the engagement and efficacy of the learning process. Second, creativity may itself be learned, acquired, or enhanced through education [5; 361]. Individual differences in creativity are large. From a personal mental representation of the problem to be solved, the

designers make analogies, which lead them to have more ideas than they then confront the design context for their evaluation. For Bonnardel, the designers make analogies with the world around them to find original ideas, and they are inspired by objects more or less familiar to understand and solve the problem: they transfer the operating principle of an object known for developing the operating principle of the object to be designed. Thus, the author advocates the use of inspirational objects that, when they belong to a domain external to the design context, favor creative activity [1].

In our case, the creativity of the approach, and thus that of student management projects, could be favored by a specific support system that allows them to: 1) reformulate the personal and professional context they have to deal with from outside elements; 2) help them to make analogies with their environment; and 3) find more creative and therefore more suitable solutions.

To be used and reused, the approach must be activated quickly. In addition, it must be able to evolve and enrich itself during this use. Thus, it is necessary to find a support adapted to this approach and its evolutionary characteristics. Our focus was on mind maps for the reflexive dimension, which is the ability to visualize information about personal reflections.

The concept of mind map or mind mapping is not recent since it was created in 1974 by psychologist Tony Buzan. He evokes the idea of heuristic maps: they are diagrams that semantically connect ideas, concepts. The adjective "mind" can replace that of heuristic when the card represents the thought of the one who created it. It is composed of branches connected to a central node. Each branch corresponds to an idea, an element of thought [8; 24]. The mental map is nevertheless contextual, it depends on the problem posed. It can thus correspond to a photograph of thought, relating to the mental representation that the individual has of the situation. Recall that in cognitive psychology, the mental representation is a detailed construction: it is not static but evolutive according to the context and the parameters to be managed at the moment of its creation [9]. From a cognitive point of view, this type of representation can thus help to conduct a reflexive activity and thus to a self-evaluation of the way in which the individual perceives the problem he encounters.

Mind mapping is a creativity and productivity enhancing technique that can improve the learning and efficiency of individuals and organizations. It is a revolutionary system for capturing ideas and insights horizontally on paper. It can be used in nearly every activity where thought, planning, recall or creativity are involved [3]. Starting with a central image and key words, colors, codes and symbols, mind mapping is rapidly replacing the more traditional methods of outlining and note taking in workplaces around the world [7]. The proliferation and use of mind mapping software has and will continue to accentuate this trend.

Through the design of new software, mind maps that were drawn in pencil are now digital. This dimension is all the more important because it supports the dynamic side of thought: the individual conducts a self-evaluation more easily by suppressing, modifying elements or by going back in the event of errors. The researchers also suggest, in a study of collaborative activities, that the creation of mind maps promotes creativity among students [4].

The mind map thus seems appropriate to support the student individually in his process of designing the project construction process, but also for the visualization of each project.

We have found mind mapping to be a powerful tool for case teaching, where students are required to gather, interpret, and communicate large quantities of complex information. It is an extremely effective technique for sharpening the thinking and learning process.

Recent research has shown that the use of mind maps increases student satisfaction with learning, and earlier studies have shown that mind maps can improve student satisfaction and learning in certain management contexts. This presentation offers an overview of the concept of mind mapping and the specifics of its implementation and outlines an approach designed to improve student learning satisfaction and achievement with regard to the major topics covered. The concept is, however, applicable to any management course, whether undergraduate or graduate.

Concept mapping has considerable utility for tracking change in the course of learning, and has the capacity to distinguish between changes

that are meaningful, and those that are not. This is discussed in the wider context of learning, and teaching and research.

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