Competency-based Education Applied in a Business Course

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Abstract The objective of this paper is to report the experience in the organization of the pedagogical project by competence in a Business course. The research, of qualitative approach, was based in the analysis of the Course Pedagogical Project CPP, the Institutional Development Plan, the Resolution 04/2005 of CNE and the National Research CFA/CRAs of 2011.This article proposes a roadmap for deployment of a CPP based in competence and the significative learning from an empirical situation. Any implementation of a new pedagogical proposal like competencies pedagogy requires a change in the mentality and paradigm from the course coordinator, the professors, the students as well as a reorganization of the higher education institutions that are committed with their students' education. This experience aims to contribute to the state of the art for a solid and effective education to meet the interests of the organizations that will hire these professionals.

Keywords: competences, pedagogical project, competencies pedagogy, competency-based education

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1. Introduction

The issue quality in Business teaching was cover theme of Nov/Dec 2013 issue of RBA Revista Brasileira de Administração (Brazilian Business Magazine), of CFA Federal Business Council. According to 2012 Higher Education Census, there are 2160 Business undergrad courses and 850.000 students, making it the biggest undergraduate course in Brazil. We are the biggest, however how is the quality? This article shows that there was a discrete evolution from 2009 to 2012 in the grades of the National Exam. The so desired quality will only become effective as the changes in attitudes and behavior are promoted [13].

CFA sustains that the professor becomes a mentor or mastermind and not just a mere knowledge transmitter. At same time, the role of the student should be unfolded, changing from supporting to become a leading figure. In other words, CFA suggests that the higher education model must move from teaching to learning. The should then apply different learning methodologies and/or use activities that aim to bridge the gap between school and companies, between theory and practice, such as case studies, group assignments, discussion of solutions to simulated business problems or situations and thus, develop the competences required in the real world. Antunes [1] states that in the classroom, the difference towards competency-based education is materialized in the way the information is treated, giving it a contextual meaning and linking to the student professional life, building the knowledge with him.

For Burnier [3], to ensure that the knowledge and contents have a meaning for the student, they should not be divided in disciplines. On the one hand, splitting in disciplines may facilitate the knowledge acquisition by students; but, on the other hand, it deprives the knowledge from its meaning and integration. Although the knowledge has been absorbed, it is not possible to ensure skills building.

A business environment and technological progress in constant mutation that end up causing changes in the labor forces and their qualifications as well as in the productive organizations, are the biggest change drivers of the Business courses. Therefore, the objective of this paper is to report the experience in the organization of the pedagogical project in a higher education school located in São Paulo, Brazil, bringing into discussion some necessary pedagogical teaching unfoldings and changes related to the construction of competences for its Business course. The authors of this article started this pedagogical project in October 2012 and implemented in February 2014. The pedagogical project by competence is not something novelty in Brazil as attested in Oliveira and Chamberlain study [14], however, they did it in engineering courses.

This article presents in the next section the literature review followed by research methodology adopted; then, the live experiences by the authors since the pedagogical project conception until its implementation. In the last section, the final considerations and recommendations for future studies.

2. Literature Review

This section is divided into three sub sections.

2.1. Competence: Know, Know to be, Know to do

For Perrenoud [15], competence is the ability to articulate a set of schemes beyond the knowledge allowing mobilize knowledge in a specific situation, in a particular moment and with judgment. Fleury [4] defines competence as the combination between the theoretical knowledge (know), the skill (task – know to do) and attitude (know to be). The concept of competence is connected to a superior performance of a person before a situation, without confusing it with capability or just skill and knowledge, but a sum and integration of both [9]. Competences are repertoire of behaviors that some people master more than others and make them effective in a given situation [8]. A competent person is someone who: (a) possesses certain knowledge, skills and attitudes (KSA) which she or he can use (b) performs specified tasks to (c) a standard of performance expected in (d) a specified workplace under (e) conditions of uncertainty and change [6].

Hersey and Blanchard [5] highlight when a business professional needs to master three competences to be able to perform a great job: techniques, human and conceptual. However, the authors believe that the knowledge, the skill and the attitude are too much important to organization, but whether they all together deliver the outcomes. For organizations, the outcomes mean increase of profit, growth of sales and improvement of client relationship.

All above definitions are very similar. For the purpose of this article, Fleury´s definition will be adopted, ie, the junction of three axis, formed by person (his bibliography, know to be), by his educational background (the knowledge) and by his professional experience (know to do).

2.2. Competences Pedagogy and Competency Based Education

These two pedagogical models refer to a process that aims to develop the student´s ability to apply the knowledge acquired in different environments and situations. It requires a change from the traditional focus on knowledge and content reproduction to be taught to the competences to be built and developed [10,15]. The contents are no longer the end to become the means along with the use of diversified teaching methodologies [18].

For Perrenoud [16]. knowledge is mobilized according to the representation of the situation. Mobilize is not only 'use' or 'apply', it is also adapt, differentiate, integrate, generalize or specify, combine, orchestrate, so conduct a set of mental complex operations that, connect at the situations, transform knowledge instead of moving them.

Chart 1. Change of paradigm

Paradigm to overcome	New paradigm
Focus on the content to be taught	Focus on the competences to be developed and the learnings to be built
Curriculum as a regulated set of disciplines	Curriculum as an integrated and articulated set of situations-mean, conceived and organized to promote significative learnings.
Official control: accomplishment of the curriculum	Official control: generation of general professional competences

A document from the Secretary of Technological and Middle Education SEMTEC [17], from the Ministry of Education, is aligned with above premise and demonstrates the change of the teaching paradigm, as shown in chart 1.

2.3. The Role of significative Learning in the Competence Based Education

The central concept of Ausubel theory is of the significative learning. This is characterized by an interaction (not a simple association) between specific and relevant aspects of the cognitive structure and the new data, whereby they become meaningful and are integrated to the cognitive structure in a non-arbitrary and non-literal manner [11].

In contrast with significative learning, Ausubel defines mechanical learning where new data are learnt without interacting with existing relevant concepts in the cognitive structure. The new information is stored in a literal and arbitrary manner, not contributing to its differentiation and development [10].

3. Research Methodology

This is a descriptive study because it seeks to describe and report the experience in the development of a pedagogical project in a higher education school located in São Paulo, Brazil. It is worth mentioning that this school offers seven different Engineering courses and a Computer Science course with a total of 8000 students. This project is oriented to the construction and development of the competences in the students in the undergrad Business course. This Project has no similar precedent in this school.

The authors of this article participated actively in all the steps and their intervention was paramount for the preparation of this study.

For the development of competences, three set of documents were researched: National Curricular Guidelines from the National Education Council (Brasil, Resolução 04/2005), 2011 National Research from CFA Federal Business Council and material from a talent development consultancy company.

The conception, development and implementation of this new pedagogical project started in October 2012 with preliminary ideas and discussions, went through 2013 with contribution of the dean and his provosts, the coordinators and professors of this institution, and at last its implementation in February 2014 with a new competence based curriculum.

4. Analysis and Discussion of the Results

4.1. First Step: Pedagogical Project Objective

The purpose of this higher education school is to maintain the teaching excellence tradition to the society and the challenge of keeping it updated to the rapid changes in the corporative world. Aligned with this purpose, the objective of the pedagogical project is to develop the professional competences that are required from the students by the market besides contributing to the

development of essential competences for his/her organization. What distinguishes the performance of each student is not the volume of content that he/she acquires but how he/she organizes, integrates and articulates [10].

4.2. Second Step: Definition of the Competences and Their Sequence

Based on the competences extracted from the three set of documents researched, the authors formulated the respective key competences and their proper sequence for the learning by the student as he progress throughout (or over) the course). It is the formation itinerary of the competences. This sequence was determined as follows: communication and negotiation; logical, critical and analytical thinking; creativity, innovation and flexibility; knowledge management; systemic view; business and market view, decision making, leadership; result driven, interpersonal relationship and customer driven.

For each key competence, suitable contents were suggested to promote this learning. An illustration can be seen in chart 2.

Chart 2. Development of the competences

Competences and skills	Key competence(s)	Proper content
Develop capability to elaborate, implement and consolidate project in organizations	Result driven Interpersonal relationship	Project management; Human skills and Business strategy

4.3. Third Step: Definition of the Curricular Components and Objectives in Each Semester

The next challenge was the identification of the curricular components in each semester. Based on the suitable contents for each competence(s), these were transformed into curricular component and properly aligned with the competence(s) to be developed in each semester. This will enable us to know which competences are being developed in each semester in a continuous and cumulative way during the tenure of the course.

Chart 3. Objectives and integrator components

semester	objective	Integrator component
1st	Introduce the organizations and their role in the society	Management Elements
2nd	Know the organizations environment	Organizational Models
3rd	Analyze and understand organizational problems	Business Dynamics
4th	Understand the organization´s relation with their clients	Markets and Demand
5th	Understand processes and systems for business conception	Business Conception
6th	Understand processes for business implementation	Business implementation
7th	Develop and manage organizational projects	Organizational Projects Management
8th	Understand the businesses in the organizations network	Business network

However, the binding element of the curricular components in each semester was the creation of an objective for each semester. This objective is the focus of that semester and the curricular components revolve around it. Like the formation itinerary of the competences, the objectives must also be progressive and reflect the

evolution of the student throughout the course. Additionally, the authors elected a curricular component as being the integrator with the objective of integrating all the other components to fulfill the objective of the semester. See chart 3 for illustration.

Menino [10] believes that the dynamics character of competence based education must develop the student´s potential to work in flexible and volatile environments and prepare them to add constantly new contents and/or to enhance his productivity in a company as well as to perform multiples functions and activities throughout their professional life.

4.4. Fourth Step: Determination of Learning Methodologies

The guidelines defined in the pedagogical project have the challenge to break the paradigm of the professors as knowledge transmitter, change the model of teaching to learning. Under this new perspective, the teacher must utilize new learning methodologies. These methodologies must meet two criteria: a) they should demand from the student a more active role in the classroom; b) they must be interactive. Zabala and Arnau [19] advocate the use of diversified methodological strategies and significative learning that place the student in an active role.

For Oliveira and Chamberlain [14], it is essential for the student´s development the design of the methodological strategies to be adopted by the teachers in the classroom, since these choices can be a reference for the students´ learning. The processes and the active learning methods must be valued as essential elements in the construction of competence based education. Chart 4 presents some of the learning methodologies that can be used in the course.

Chart 4. Methodological strategies

Methodological strategies	Descriptive
Bridging theory and practice	Comprehends simulation and/or real case studies; practical examples; debating magazines and newspaper articles correlating theory with business environment in terms of strategy, management tools and technology.
Resolutive actions	Comprehends researches, seminars and cycles of debates in which the students interact to knowledge building.
Concept maps	Graphical tools for organizing and representing knowledge. They include concepts, usually enclosed in circles or boxes of some type, and relationships between concepts indicated by a connecting line linking two concepts. The ideal is that they are developed from a particular question that we seek an answer denominated of focal question [12].
Interdisciplinary assignment	It is the integration of knowledge, skills and instrumental, scientific and technological basis that lead the student to build and developed determined competences. Menino [10] and Perrenoud [15] acknowledge the usefulness of this type of assignment.

The professors are stimulated to use the concept maps CM in all the curricular components of each semester. From these individual maps, the students will still develop the macro conceptual map of the semester connecting the fundamental concepts of the entire semester. Novak and Cañas [12] notice they are finding in various Science textbooks the use of conceptual maps as a way to sum up the knowledge acquired by the students after studying a chapter or unit. In Koc study [8] with pre-service teachers

in Turkey, they had positive perceptions about CM, helped them prepare for class lessons and examinations, understand complex issues, and reflect on their (mis)understandings.

In their research, Siqueira and Nunes [18] confirm that the interdisciplinary assignments, case studies and bridging theory and practice were being utilized by the teachers, although a lecture type of class is still predominant. One of the challenges for the use of these methodologies is the need to balance the three "knows" of competence. Kobayashi and Leite [7] noticed that the general and specific competences of the discipline Notions of Management in the course of Nursing are more related to know to do (59% and 54% respectively) at expenses of know (34% and 45%) and know to be (7% and 1%).

4.5. Fifth Step: Determination of Assessment Methods

One of the critical and fundamental points of a pedagogical project is the assessment, notably the continuous assessment given its dynamic and flexible character of the competence based education [10].

The teacher will be free to define the best way to assess the performance of his students, being a written test, exercises, projects, assignments, conceptual maps and other activities proposed in the curricular components.

It is essential that the professors monitor the activities performed by the students during the semester so as they have reference of what to be done. This will allow a proper assessment of the positive points by the students, their hits and errors and items for improvement in their performance. In Siqueira and Nunes [18] study, 9 out of 15 teachers interviewed have done assessment activities throughout the semester and commented their written test when they returned it to the students.

However, some aspects may hinder the practices oriented to the development of competences and their assessment. The first is the hiring and use of professors that receive wage per class hour. They do not receive for their time dedicated to projects and/or off class time with the students, develop planning, share their classes with their colleagues and also time to research projects. The other aspect is quantity of students in class. This may hinder the professor to monitor each student in the classroom, besides taking so much time to analyze and comment the test and activities with them. The focus on learning would be jeopardized. These two aspects were also identified by Siqueira and Nunes [18]. Burnier [3] believes that the collective work should be an institutional objective, with time dedicated and proper compensation.

4.6. Sixth Step: Alignment and Qualification of the Faculty

A group of more than 12 teachers, members of the Structuring Faculty Core (or NDE Nucleo Docente Estruturante) of the two campuses, helped in this project in a total of seven meetings during 2013.

In August 2013, this university sponsored in its facility a round table to discuss the theme: How aligned are the curricular components of the Business Course with the competences and skills demanded by the market and prescribed in the National Curricular Guidelines? The

following guests were invited: the president of Angrad National Association of Undergrad Courses of Business (representing academy), the Academic Vice President of CRA/SP (Business Regional Council, representing the professional association), the Publishing Director of a publishing organization (representing the publishing market), the Development Partner of a talent development consultancy company (representing the market) and the former Dean of a higher education institution (representing faculty). This round table served to landmark the pedagogical project in progress with the inputs and insights from the guests.

In October 2013 the Head of Business Department called for a conference all the faculty. He presented the pedagogical project in its final stage, the concepts of competence, competency based education, learning methodologies and the assessment methods. Some opinions were incorporated in its final version as result of this conference. Trainings on conceptual maps were provided to the faculty as well as to the students.

5. Final Considerations

The results presented in Siqueira and Nunes research [18] point to the existence of merging elements with competencies pedagogy, however they appear in a non-articulated way, without a view of the big picture and clarity in the understanding of this teaching model. This shows the difficulties and hurdles to be overcome in the adoption of competences in the pedagogical project. This is a situation in which this university will face.

This paper does not intend to offer a comprehensive analysis about the competence based education applied in a Business course nor define a model to be followed or adopted by other higher education school. Because it has a descriptive objective, this paper reports the experience in the development of a pedagogical project based on competence in a Business course.

Any implementation of a new pedagogical project like competences pedagogy requires a change of mentality and paradigm of the course coordinator, the faculty, the students as well as a reorganization of the higher education institutions that are committed to quality.

This project is audacious for demanding changes in the educational paradigms and because there are very few similar experiences in Brasil, notably in Business courses. The efforts employed to innovate its practices has impelled this university and the Business course faculty to seeking alternatives to make this new curriculum and the pedagogical project viable. This is an on-going process that is built as new challenges present themselves.

However, as this new curriculum will be implemented one semester at the time, there is the concrete possibility of reassessing this process with the faculty and students in order to make the necessary adjustments. This university seeks to democratize a cutting-edge knowledge and bring it to organizations that are looking for talents in the market. As suggestion for future work, we suggest continuous monitoring with the students throughout the course in order to check the absorption and understanding of this new pedagogical model and the development of their competences.

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