Use of Innovations, Active Methodologies and New Tools in Higher Education: Soft technologies building skills

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ABSTRACT---- *This article discusses the experience carried out in a higher education institution using active methods that are characterized as ways to develop the process of learning and in which raw materials, from real or simulated experiences, are used to address challenges arising from the core activities of social practices in different contexts. They are innovative strategies that can guarantee learning, retention of the academic, access to quality education and the use of light Technologies, expanding the meaning of technology to the knowledges and their material and non-material developments in the production of services. This article also discusses that the formation of professional competences is not sustented by itself only in the acquisition of knowledge but also in the know-how and development of the abilities to make consistent and criterious decisions.*
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1. INTRODUCTION

The heavy investment in higher education formation is shown by the Brazilian Institute of Geography and Statistics (IBGE) (2010), which reports the percentage of Brazilians with a college degrees rose from 4.4% in 2000 to 7 9% in 2010. In the South of the country, this percentage was comparatively more significant because it rose from 4.8% to 8.9%. Another fact presented by IBGE (2010) is that the southern region has 808,062 undergraduated people in at least in one higher education course and an estimated 2,214,879 people with complete high school level and an incomplete high education course. A significant finding is that from '6.197 million students in higher degree courses, 670 000 (10.8%) had already completed another undergraduation course' (IBGE) 2014.

This reality reflects the expressiveness and responsibility of the Higher Education Institutions (IESs) towards the integral formation of the student and that responsibility around the quality of teaching that is practiced is a recurring agenda for these institutions. Added to these data there is a highly competitive environment, which have induced the necessity of excellency in teaching, nowadays an important strategic advantage.

The progress is evidente, but in the meantime there is no possibility to guarantee only the access through different devices and affirmative politics actions. It is necessary to ensure the permanence of these academics and, mainly, work in expectation of quality in IESs. Therefore, the teaching strategies and quality of pedagogical proposals must address the many changes that are taking place in society and also the use of available technologies must help to increase que quality of teaching in educational contextes.

These perspectives should counteract in an educational reality that still shows great difficulty in drawing near the pedagogical discourse of teachers with the sutends profile wanted and the profile that is being formed. The reality in many IESs has still shown passive students who acts as mere spectators, dealing with "alienated contents of your reality and, on many occasions, in artificial learning situations." (MACHADO, MÜLLER NETO, 2002, p.1)

The difficulty of students relies on undertanding that "to know something is not synonymous with to do it in practice" (Porlán & Rivero, 1998), ie, the access to knowledge is one of the steps to buil skills. When the objective is to develop the professional competence of learners, the theoretical knowledge acquired during the courses - despite essencial- is little or nothing when it comes to help if they can not be deployed, integrated and used, fast, safe and in an appropriate way for solving real and specific problems such as faced by organizations. Thus, for IESs is not enough to form for knowledge, but also and primarily to the competence of doing. According to the four pillars of education for the XXI Century, It is necessary to know, know-how, know-to be and know- to live.

In this skill-building movement, we highlight the importance of interdisciplinarity which is configured as

> 'man's attempt to know the interactions between the natural world and society, human creation and nature, and ways and means to capture the social totality, including the individual/society relationship and the relationship between individuals. Thus, consists of interaction processes between rational knowledge and sensitive understanding and with a integration between such different knowledge, and at the same time, inseparable in the production of meaning of life 'Pereira, 2009, p1.

Moreover, either in a perspective of authors who address the active methodologies, or in an interdisciplinary perspective, competence means more than having knowledge to act, It requires further assess to the appropriateness of the actions, adjusting them self-consciously to the situation in which it is confronting and also to the purposes, even those not immediate.

Hence, "... the hole of the competencies organizer is essential when considering the needs, common to every human being, to orchestrate their different knowledge, forming increasingly complex schemes and adjusted to the apprehension and representation of reality" (BOCCHESE, 2001 , p. 112).

In order to replace the dichotomy between theory and practice, the separation between thinking and acting gives an harmonious integration between these two dimensions, and the competence eventually becomes the organizer of the relationship between knowing and acting. Therefore, the authors consulted are unanimous in proposing and defending a teaching skills builder, and the interdisciplinarity consists in finding answers to questions that are systematically repeated.

The interdisciplinary character of continuity has implications with incessantly questions in the history of humanity, such as: in which ways and manners can the man know? How is the relationship of man with nature and society, in a fragmented way, as an isolated fact, or integrated in the observed/experienced is inserted in a network filled of relationship   that gives it meaning and significance? From which form and meaning can the man transmit this knowledge? (PEREIRA, 2009, p. 1).

In this context, if the subject wants to make effective his professional work as a teacher (Vasconcelos, 1996), there is no way to ignore the fact that the center of any didactic-pedagogical action is always with the student and, more precisely, with the learning that these students could perform, with the certainty that when the student prioritizes the search for meaning (Cunha Leite, 1996), they question the content and build mental objects by processes involving successive syntheses and analyzes.

Understanding that educate "means to empower, enhance, so that the subject is able to get the answer for his/her own question, means forming for autonomy" (GADOTTI, 2000). Not forgetting that "knowledge is navigating in an ocean of uncertainties, among archipelagos of certainties" (MORIN, 2001), which imposes then seeking to alternative objective of approaching the students experiential reality with the theoretical concepts developed in undergraduating courses. Educating for autonomy also means, therefore, "a political act and to the field of vocational training and or teachers training, a pedagogical political act." (BERBEL, 2011, p. 30).

To better explain the approach that currently imposes this definition we cite Malcolm Knowles (1980), and the andragogy, which is,in the twentieth century, a science concerned with studies in education for adults in order to seek an effective learning for developing skills and knowledge. Knowles organized his ideas around the notion that adults learn more easily in informal, comfortable, flexible, non-threatening environments.

Bastos (2006) presents a conceptualization of Active Methodologies as "interactive process of knowledge, analysis, studies, researches, and individual or collective decisions, in order to find solutions to a problem." We understand that the Active Methodologies are based on ways to develop the learning process, using real or simulated experiences to solve the conditions of successfully coming from the core activities of social practice in different contexts challenges.

There are many possibilities of Active Methodologies presented by Bastos (2006), with potential to lead students to learn in order to achieve autonomy. The *case study* is one, widely used in on Law, Management, and Medicine fields, among others. With the *case study*, the student is taken to analyzing problems and making decisions. Yet, the project method is a procedure that can involve teaching, research and extension activities, which is the object of this article. The problem-based learning to Rogers (2011) is one of the few genuine inventions that emerged over the past decades teaching and learning approaches.

Under another perspective we also moved into new Active Learning Methodologies, they have the potential to arouse curiosity, as students fall in theorizing and bringing new elements not yet considered in classes or in the own teacher's perspective. If one enjoys and values, students urge into "feelings of engagement, perceived competences and belonging, in addition to the persistence studies, among others." (BERBEL, 2011, p.28)

Mitri et al. (2008) explain that the active methods use questioning as a teaching-learning stretegy in order to reach and motivate students, as facing the problem, he/she holds, examines, reflects, relates his/her story and starts to reframe their discoveries. According to the authors, the process of questioning may lead the students to contact with information and knowledge production, mainly for the purpose of resolving the problem and promoting their own

development. Learning through questioning and/or problem-solving of your area is one of the possibilities for active involvement of students in their own training process.

This logic will require, as Enricone (2001) claims, that teachers understand and deal with the innovations in the sea of uncertainties education and note the importance of the creative capacity to make available these processes of change required in relation to teaching. As one of the interesting tools and methodologies available, the 'desing thinking' can be brought to innovation in the classroom. Academics see as challenge and may use it in their discovery phases of the problem, of interpretation, ideatization of possible solutions, experimentation and evolution.

To understand the neaning 'lightweight technologies' we sought in Mendes-Gonçalves (1994) and Mendes (2002) who have used it in Health fields and do not restrict the meaning of technology to a group of material and instruments of labor, but extend it to the knowledges and its material and non-material unfoldings in the production of services (health) outcomes, stating that technologies carry the expression of relations between men and objects under which they work, as Soft technologies are produced at in this relation.

Among the possibilities, we created problem and situations that were, at the same time, mobilizing and guiding for specific learnings, but also building an innovativing experiences, seeking the integration and articulation of the curriculum, correlating various disciplines that are developed separately.

In this context, the production of knowledge and know-how is associated with "... solving real problems with moments of creation of new skills, accompanied by a reflective and theoretical activity sustained by foreign aid" (Porlán; Rivero, 1998), and this helps is guaranteed not only by the teachers of vocational subjects, but also endorsed and built by other IESs members where the experiment is being conducted. From this perspective, educational practice-critical (Freire, 1999) conceives education as a form of intervention in the world.

For this reason, what is sought with this form of didactic inventiveness (Perrenoud, 1999) was the prospect of a leadership exercise (LEITE, 1999), understood as the possibility of questioning and participation/involvement of the subjects in the classroom, in the spaces - micro and macro environments institucionais- involving students pupils, students/teachers, professors/teachers, educators/others.

We have chosen two experiences that we believe can dialogue with the theoretical support already provided.

2. THE TRADESHOW

The relation between theory and practice, understood as articulating axis of knowledge production in the dynamics of the curriculum of the College of St. Francis Assis - UNIFIN is present through projects and activities included in the amount of teaching time. In this perspective, the academic project in question is founded on the theory-practice relationship by integrating the activities of the various disciplines involved, ensuring a systemic vision and challenging contexts. Remembering that maintain the practice and the theory always in unity, are constant challenges for those who teach.

The effective skills building should reflect the goals of the training in the election of its contents, institutional organization, methodological approach, and also in creating different times and living spaces for managers in training. Therefore, we use the concept of competence Le Boterf apud Perrenoud (1999) which comprise not as a state, but as a process, so something that is built and that is not given a priori. Meanwhile, this process arouses the need to rethink the methodological perspective, providing learning situations focused on problem-solving situations or developing projects that enable the interaction of different knowledge, which may be arranged in areas or disciplines, as a curriculum design that we intend to consolidate in the IES. This methodological approach is important because in a pedagogy of problem-solving situations (PERRENOUD, 1999), the role of the student is to involve yourself, participating in a collective effort to design and build a Project and, at the same time, new skills.

From this perspective, the Tradeshow was a unique opportunity for collective construction model that included all the elements mentioned above. Student responses at the time of this evaluation show the extent they perceive as a tool to complement and enhance learning.

The original idea for the event came from teachers' discussion about the difficulty of the students to associate theory and practice, combined with learning opportunities that perceived experience of interaction between several different disciplines, including students of various semesters, between the various branches present in institution and between the school and the community, and so the 'overcoming, in schools, the way in which knowledge is constructed and presented can not understand the school and the knowledge of social life separate from other spheres of human life' Pereira, 2009, p.1 it would appear that this model could enable the ability to solve problems collectively, blending knowledge and producing new knowledge that is applied in parallel to the training process.

We observed, in this way, the integration of students in various stages of progress of the course, showing the application of the knowledge acquired at different stages of the course. Below there is a list of disciplines and actions triggered to perform the activity.

Tradeshow of UNIFIN
Disciplines - Actions
    • Coordination of Course / Project - Support on the construction and overall project execution, facilitating the articulation of curriculum and resources for the event.

• Organization of Systems Methods- Strategic planning of the event; spaces selling; evaluation of the flow of public and determining the appropriate layout.

• Materials management and production - Flows and Logistics of the event.

• Communication and Corporate Expression - Preparation, suggestion and/or revision of the wording of official documents of the event; panel presentations on issues related to business reality and/or the new demands of the market;

• Sociology of Organizations - Application of research on the meaning of work; synthesis of lectures, workshops and other activities parallel to the event to support the Final Report;

• Law Public and Private Institutions - Reviewing the legal instruments to be used by the organization, among other contracts;

• Scientific Methodology - defining models of presentations of research conducted; organization time undergraduates.

• Organizational Behavior - Note in the whole process of organizing and analyzing the Academic Week leadership profile;

• Mathematics - Contest "We want your autograph", creating competition for the winning company.

• Small and Medium Enterprises Management - Launch, exhibition and sale of products created by students in this discipline.

• General Theory of Management - Assistance in applying the instrument of satisfaction research (gathering together exhibitors and visitors);

• Psychology - Motivational Panel;

• Marketing I and II - Evaluation of the offered variety: product, communication and the environment stand, returning to exhibitors after the fair;

• Entrepreneurship/ Small and Medium Enterprises Management - Diagnostics presentation of companies prepared by students;

• Analysis and Preparation of Projects and Business Plans - Activity analysis and final report.

• Strategic Planning and Business Policy – Workshops organization with transverse and important themes to the market and analysis of the exhibitors on the strategic perspective negócios.- topics

St. Francis of Assis School, 2009.

3. GAME COMPANY

Making decisions is a difficult task that is normally only held during the exercise of the company managers profession. The teaching of management and decision-making for managers, even without professional experience, presents difficulties for teachers due to the need to create scenarios with critical situations. Thus, one should carefully reflect on the various options. Among the alternative techniques to lecture, we highlight the small group teaching. In this mode, are highlighted the technical seminars, case study methods and business games.

According to Martinelli (1987), business games have become an important tool in teaching Business Policy, courses in Business Administration and other related courses. In addition, they have played an important role in students and business executives training, with a major contribution to the exercise of decision-making and the development of the fundamental activity of an effective executive skills. This method is well accepted by students to combine learning and satisfaction and represent a valuable resource that, if exploited, can contribute significantly to the advancement of management education (SAUAIA, 1995).

Besides the improvement of technical skills to Gramigna (1993), the game facilitates the improvement of social relations between people. The offered situations shape the social reality and everyone has the opportunity to experience their behavioral and attitudinal model.

Beppu (1984) states that the business game is, by itself, an extremely dynamic process. Its flexibility allows the teacher to adapt it not only to economic and social trends, but also to the changes legislation complies. In almost every business games, the differences between the groups and participants are enough to make them different from one course to another, since the aspects of human behavior, group members will always be different, no matter what you try standardized them.

The boldness of the teachers group from IES was the construction of a proposed game company, designed, coordinated and led by a group of teachers of the course, in real time, involving two Business Administration and an Accounting courses, a sum of over 500 students. The game, in the retail area, featured retailers, financial institutions, suppliers, providers of communication materials, real estate, financial consulting and capital markets, business consulting, quality audit, tax audit, market research, networking service trade union and PROCON.

The disciplines involved in the game were the following:

-Costs, Finance, Sales Management, Production, Human Resources, Planning and Corporate Strategies, Decision Making, O & M, Management Information System, Management Control, Accounting, Wealth Management and Materials, and Research Methodology Management of Small and Medium Enterprises, Audit, Business Plan, Business Policy, Entrepreneurship, Capital Markets, Sociology, General Theory of Administration, Accounting Auditing,

Financial Management I and II, Marketing I, II and III, Social Legislation, Management Cooperatives and Small and average Company, among others.

The activities developed by students of accounting sciences were the following:

-Bookkeeping of financial operations; Bookkeeping of tax receipts (tax control); Inventory Control; Bulletin Box Preparation; Preparation of Payroll (Personnel Administration); Tax Audit; Accounting audit; Consulting Pricing; Consulting Performance Analysis; Business consulting budget; Board of Trade; supervision; Calculation of income from business games.

From this perspective it should be noted interdisciplinarity as an important device in EISs and their curricular structures always present, because according to Morin (2003), forms articulated by the scientific revolution of the twentieth century, called by him *the new scientific spirit*, provided positive aspects that should "bind, contextualize and globalize knowledge so far fragmented and compartmentalized, and that, thereafter, allow joint disciplines, each other, in a more fruitful way" (MORIN, 2003, p.26).

4. CONSIDERATIONS

In the midst of the great social changes there are the teaching and learning processes, facing challenges because they contemplate the imposition of a reality that constantly updates, involving new needs and new challenges, including and engaging students/graduates in this process and also predicting and introducing new methodologies that articulate and mobilize all actors and elements dynamically.

The examples cited in this text such as the Tradeshow andthe Game company allowed a visceral connection between teaching and learning, skills building, student-teacher interaction, School and social reality.

The urgency to create and seek consolidation of the teaching methodologies that break with boredom, inertia and the accommodation must be made and have the protection and interdisciplinarity support.

The integration between students and the institution, normally mediated only by the group os professors, gained new communication channels to require "negotiations" of students with direction to release the necessary of a physical space for the event and also institutional support, with approval of the general planning of activities extension. A maximum of realism was obtained to encourage students to take the initiative contact. School representatives have taken, as much as possible, a collaborative attitude, making room for students action and decision-making.

We observed integration between students and the community when students, having developed careful planning, set about implementing it. The strategies designed to implement, development, supply and product marketing (a physical space in which local entrepreneurs could market or expose local products and services) were implemented and evaluated. Customer satisfaction surveys were applied together with exhibitors and customers to gather information for planning future events.

The Game Company showed different contente weaknesses not worked throughout the course and with an importance in the market. Experience required and described the relationship between the groups and enabled the ability of problem-solving in bot, teachers and students, to deal with the surprises and difficulties inherent in such activity.

Finally, we obtained the integration between the school and the community by the physical presence of exhibitors and visitors on the school, with exchange of information among those who were present. The interaction has gained strength by the event promoting by local media, strengthening the overall benefits obtained in the process.

As an ongoing process of collective and permanente construction, the project presents the inherent difficulties of each stage, because there are no fixed rules and in each edition changes have been made to better enjoy learning situations, advancing up the constructions of partnerships between disciplines and correcting itself, including any misconceptions.

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