THE TEACHING OF BUSINESS ADMINISTRATION USING BUSINESS GAMES

Paulo A. Marques Filho (POLI-USP, UNIP, FAAP - São Paulo, Brasil, *pauloamf@ensino.net*)

Marcelo S. de Paula Pessôa (POLI-USP, UNIP - São Paulo, Brasil, *mpessoa@usp.br*)

Andrea Daffara (UNIP - São Paulo, Brasil, *adaffara@aol.com*)

Resumo

O desenvolvimento de novos *software* de ensino, no atual mundo virtual, provoca novas formas de transmissão do saber. O seu uso em sala de aula (ensino presencial) ou em outros locais (ensino à distância), revoluciona antigos métodos existentes nas seculares escolas, como o uso da lousa ou mesmo dos livros. A utilização dos Jogos de Empresas, baseados em computador, no ensino se amplia, eles seguem as constantes evoluções dos computadores, suas interligações em rede (Internet) e das avançadas linguagens de bancos de dados desenvolvidas num ambiente gráfico cada vez mais amigável. O ensino seguindo esta evolução utiliza esta ferramenta didática, cria novas situações para alunos e professores. Principalmente nesta época, onde temos o "*dever de repensar a educação para enfrentar as demandas deste mundo globalizado em mudança*" (10º IOSTE). A educação demanda novos posicionamentos, se atualiza com os estudos andragógicos (ensino voltado para os adultos) e novas atitudes que os alunos e professores assumem num ciclo de aprender-pesquisar-ensinar-aprender constante. Fazendo a transposição do saber científico em um conhecimento aprendido pelos alunos, tendo a telemática um importante papel nessa ação. Neste contexto, aborda-se neste trabalho o ensino de Administração (educação profissional) o qual tem a característica de transmitir o conhecimento através de um conjunto de disciplinas de diferentes áreas do saber, de forma estanque e segmentada, aplicando-as na gestão de um negócio, que exige visão integrada e significativa. Estuda-se como ocorre a integração destas disciplinas vistas no curso de Administração em uma aplicação de Jogo de Empresas

Keywords: Business Game, Simulation, Management Teaching.

1. Introduction

The use of new telecommunications and information technologies continues to change education. More and more, theory and practice merge in the classroom (physical presence) as well as in self-study programs (remote systems). Old teaching methods are thus transformed and applied in conjunction with new computer techniques.

Following this trend, teaching at the college and university levels is extending the use of new hardware technologies (notebooks and networks) and programs, such as word processors, presentation spreadsheet software. All are taken for granted in classrooms that use information technology.

Accordingly, over time, education must move closer and closer to the actual situations that graduates will encounter in the job market. It must be assured that the different areas of knowledge (disciplines) which makeup an undergraduate education are relevant and meaningful to the formation of future professionals who are able to compete. This is especially true when teaching business administration, which has the characteristic of transmitting knowledge using a group of diverse disciplines in an isolated and segmented manner.

This raises a question – How can institutions that teach business administration transmit knowledge to future business managers in an integrated and meaningful manner? To answer this question, this paper studies the broadening of the use of business games in undergraduate and graduate courses, considering that they combine concepts from segmented and isolated disciplines of college study and apply them to business management, where an integrated and meaningful view are required.

The objective is to demonstrate that the Business Game is an efficient tool for teaching business administration in both the academic and business areas. To accomplish this, aspects of this teaching method will be studied. It will study the use of computer games as a teaching tool while observing the environment created in the classroom among student groups that are working and studying under the direct supervision of a professor.

2. Business games and simulations during training

Games are understood to be one of the human activities that require physical and mental effort from participants, and which are organized by a body of rules that govern their development (in time and space) for a specific purpose (Huizinga, 1993, p.33). The act of playing creates a feeling of tension and happiness which motivates people to make daring decisions (or adopt bold attitudes) whose consequences are not real, but which simulate reality.

Simulation is the construction of models that imitate real situations, in order to use these same to create training, teaching, or research experiences. One variation on this theme involves computer-human simulations in which interaction creates environments for educational or scientific investigation purposes.

Such simulations or business training experiences can be seen as a learning process through which individuals are prepared to perform work-related tasks better. It is important to emphasize that a training game should have a learning objective; clear definitions for behavior; a competitive element among participants; a high degree of interaction; and should end with a well-defined result (Kirby, 1995, p. 16).

Business training is a way to develop competencies in individuals so that they can become productive, contributing to the objectives of organizations, as well as their personal development. The use of games, simulations, structured exercises, dramatizations, role playing, and situational experiences is intended to facilitate learning processes, instill concepts, as well as to implement new skills and attitudes.

Correspondingly, a game is an activity that is governed by a body of rules and procedures that are intended to reach a specific objective in an entertaining manner. Simulation is the construction of a model that imitates a real situation through which experiences can be had for research or training purposes. When the joining of games with business simulations is applied in education, the creation of training games is permitted and the same can be used to experience management situations, teach concepts, make decisions, and study individual behavior in these situations. If we take a look at Business Games, it can be seen that all of these concepts are present.

The first Business Games that used computers appeared in 1955 (U.S. Air Force). They took advantage of military training experience (strategies) to study battlefield simulations applied to business.

Since then, Business Games have been used for business training and academic courses. Today, there are various types of games for industries, banks, stock markets, international trade, motor vehicle dealerships, and supermarkets, among others. This activity is currently growing through the use of personal computers with multimedia resources (sound, images, and films), such as the business game on CD that is supplied to businesses by Microsiga or games designed for the Internet, such as Challenge by Sebrae (the Brazilian equivalent of the Small Business Administration).

The term normally adopted in Portuguese (*Jogo de Empresas*) is derived from the English name, Business Game, and the same may also be called a business simulation, management simulation or exercise, business simulation or activity, or even business management simulation.

Depending on the focus or the model analyzed, games can be classified as follows:

- **Mixed games:** combine organizational and behavioral components;
- **Functional games:** focuses on a specific function within a company;
- **Organizational games:** focuses on various functions within a company;
- **Business competitor games:** in addition to the items mentioned above, includes business competitors;
- **Market or structural games:** include situations involving all organizational areas, as well as the economic environment.

Accordingly, a Business Game can be defined as a simulation (virtual) of a business environment where the participants act as executives of a company, managing resources and evaluating, as well as analyzing hypothetical business scenarios and the possible consequences that result from the decisions made. (Marques Fº, 2001, p. 135).

3. Adult education

Education, which in a broader sense especially seeks to form citizens who are aware of their environment, is comprised of teaching which represents the educational process in action and by learning which is a consequence of this process. Didacticism is a tool that stimulates learning through a teaching method, which encompasses a group of techniques that drive the learning itself.

Learning with its cognitive, affective, and social aspects seeks changes in attitudes and the acquisition of skills. It occurs through means, such as experience, theory, simulation, or behavior. The teaching process includes the stages of planning, orientation, and control of a student's learning.

In 1926, Eduard C. Lindeman (USA) studied the teaching of adults in the book *The Meaning of Adult Education,* which latter assumed a supporting role in the research of other authors. In the fifties, Malcolm Knowles adopts the term andragogy (from the Greek *aner* – adult, *agogus* – conduct, guide) as the most adequate to express "the art and science of helping adults to learn" (apud Oliveira, 2000).

Knowles constructs an andragogical education model in opposition to the pedagogical model that must be considered when using Business Games in higher education or business training, since such work is mainly done with adults. The model of teaching-learning situations that adults tend to present is summarized (Krischke, 2000) in the characteristics below:

They

- are impatient readers who demonstrate strong motivation and a desire to learn;
- pursue various goals and purposes with respect to learning;
- require stimulation and importance must be given to the task being executed;
- bring life experience with them and are capable of giving and receiving;
- require social interaction and wish to enjoy the same;
- fear failure when taking part in a learning situation;
- have generally had bad experiences in school;
- reveal any individual thinking style which is unique and individual, with its own rhythm;
- have well defined needs, pursue concrete objectives, and they accelerate learning.

Consequently, it can be seen that andragogy is education that focuses on adults who seek knowledge that will be used immediately after it is learned. An adult learns dynamically through the significant and consequential problems that are put before them. Such learning generates more complex questions that may or may not be for immediate use.

These andragogical studies (contemporary) set forth a much more richer position for higher learning and even for business training. It can be affirmed that andragogy does not counterpoise pedagogy, but is instead complementary, since depending on the moment in time, whether with the teaching of adults or children, they must always be present.

Television in education also provokes changes in a teacher's posture, as well as the teaching process itself, through the use of this technology. In addition to constant updating (in terms of equipment and programs), readjustment of a teacher's methods is also required. Teachers take on a new role, that of a "pedagogical mediator".

The student assumes a position as an active participant in this process; he is no longer a passive repeater. The teacher also assumes a new attitude. Even though he does assume the role of a specialist with knowledge to communicate on occasion, for the most part he fills the role of teaching facilitator/partner, working in a team together with the students, striving for the same objectives. When a teacher uses new technologies, he becomes an advisor/segment manager for the learning process, integrating intellectual, emotional, and managerial instruction. "The teacher is a researcher at work who learns in practice and through research, teaching what he learns and achieving through learning-research-teaching-learning". (Moran, 2000, p. 30-46). The role of the teacher is broadened from simple informer who dictates content to learning advisor and manager of research and communication who coordinates the teaching process, its progress, and rhythm.

A concept called didactic transposition can be identified in this teaching process mediated by technology and supported by systemic models. The concept which was created by Michel Verret (sociologist) and discussed by Yves Chevallard (1985) in the book *La Transposition Didatique* (apud Samagaia, 2001) demonstrates the transposition that occurs with knowledge when it is transferred from the area of science to the school and sounds an alert in relation to the importance of the fact that this process be comprehended by educators. This being, providing to students scientific knowledge with a cognitive relevance or transforming a piece of knowledge (produced by a scientist) into a piece of schoolhouse knowledge that is taught by teachers and learned by students.

Perrenoud (1999, p. 65) relates didactic transposition, which is centered on a situation-problem pedagogy (a new didactic contract) in which the role of the student is to get involved, take part in the collective effort to implement a project, and construct new competencies, to the construction of competencies in individuals. This allows trial and error, voicing of doubts, opening thinking, acquisition of awareness of ones individual learning, memorizing, and communicating processes, making it a contemplative process. This construction of competencies in education is understood as the ability to utilize a group of cognitive resources (knowledge, skills, information, etc.) to pertinently and efficiently resolve a series of situations (Perrenoud, 1999, p. 7).

These concepts and today's classroom with information technology drastically alter the position of the teacher who assumes a new role – that of a pedagogical/andragogical mediator. Where the two new ele-

ments in the classroom, the computer and programs, takeover the teaching process, executing this portion of the didactic transposition and attributing to the teacher different and new responsibilities.

All of this education technology creates a new learning environment and one of the tools of this environment is the Business Game. The teacher, advisor, or mediator, regardless of the name, all have a common objective, which is to process (with knowledge) a specific raw material (the student), using a tool (technology) into a new product (a good professional) for the market (labor place). In this case, the processor of this transformation (didactic transformation) is a catalyst (in the case of a pedagogical mediator).

4. Teaching business administration

The Brazilian Ministry of Education, through various laws, establishes the minimum content and duration of undergraduate programs. A summary of these requirements, which includes objectives, a profile of the graduate, and the skills and content required can be found in the National Test for Business Administration Programs (*Provão* – Brazil 2001). The above-cited document divides subjects into three groups:

- **G1 – basic and required subjects**: Accounting, Law, Economics, Statistics, Philosophy, Computer Science, Mathematics, Psychology, Sociology;
- **G2 – subjects required by the profession**: Management theories, Marketing Management, Personnel Management, Budget and Financial Management, IT Management, Production Management, Raw Material and Asset Management, Organization, Systems, and Methods; and
- **G3 – emerging issues**: Ethics, Globalization and the New Economy, Ecology and Environment, as well as Information Technology.

When the list of subjects offered by schools in Business Administration programs is surveyed, a wide variety of names that are different then those used by the Ministry of Education are found. After analyzing only three schools of Business Administration with four or five year degree programs, a list of eighty-eight different courses was arrived at (Marques F., 2001, p. 157).

This diversity of names for courses and content demonstrates to students and the teachers themselves the diversity of areas of knowledge that are taught in college programs. This even causes a certain degree of confusion or preoccupation with respect to the actual need for some of these subjects in a Business Administration curriculum

One of the ways to demonstrate to students the importance of learning such diverse subjects and concepts is to assure that they are applied in practical cases that have importance and relevance.

The Business Game supplies this condition, allowing all subjects to be worked with to a greater or lesser degree. This can be seen in Table 1, which was compiled using a questionnaire filled out by a group of fourth year Business Administration students at the end of the Business Strategy Game course given at the Faculdade de Administração de Empresas do Estado de São Paulo (FAESP).

In this survey, among other questions, students were asked about the degree of applicability of each subject in the business game. The results can be found in the "Points" column, which was calculated by assigning weights to the quantity of answers given. These weights were used to differentiate the choices made by students between "agree slightly x0" and "highly agree x7" based on the Lickert scale or attitude scale (Marconi and Lakatos, 1982, p. 94) using the following formula:

$$\textbf{Points} = (x0 * 0) + (x1 * 1) + (x2 * 2) + (x3 * 3) + (x4 * 4) + (x5 * 5) + (x6 * 6) + (x7 * 7)$$

By observing Table 1 it can be noted that the subjects, Holistic Management (sixth place) and the General Theory of Management (tenth place), were considered by the students to be the most important, directly opposing the opinion of the author who considers the same to be conceptual subjects. The subjects ordered from 1 to 15, which correspond to approximately fifty percent (50%) of course-of-study subjects, represented sixty-one point seven percent (61.7%) of those mentioned by students and those ordered from 16 to 29 represented thirty-seven point three percent (37.3%) of those mentioned.

It should be noted that the subject of "Economics" was only considered in fifteenth place (15th). Notwithstanding, it should have placed better due to its use in business games that involve a specific market. This could be a sign of the need for reinforcement of aspects of microeconomics with students.

Another interesting finding is that items like Communication Expression, Ethics in Business, Psychology, Sociology, and Law related subjects got low points, contradicting the main skills required by a professional, which according to Borrás (et al. 1999) are initiative, high moral/ethical standard, capability to work in a group, and leadership.

Table 1 – Tabulation of student answers - Business Administration program

	Subjects	Points		Subjects	Points
1	Budget and Financial Management	159	16	Organization, Systems, and Methods	130
2	Business Games	159	17	Information System Management	125
3	Strategic Planning	157	18	Personnel Management	124
4	General Accounting	155	19	Capital Markets	118
5	Cost Accounting	150	20	Communication and Expression	114
6	Holistic Management	149	21	Ethics in Business	112
7	Marketing Management	147	22	Advanced Topics Seminar	106
8	Production Management	146	23	Philosophy and Living	99
9	Financial Management I	145	24	Psychology	90
10	General Theory of Management	141	25	Scientific Method	83
11	Computer Science	137	26	Sociology	74
12	Raw Material and Asset Management.	135	27	Business Law	67
13	Mathematics	132	28	Tax Law	55
14	Statistics (General and Applied)	131	29	Public and Private Law	51
15	Economics	130			

Source: (Marques Fº, 2001, p. 128).

Analyzing the subjects in Table 1 above together with their points, the content dealt with in each one (Teaching plans), and in relation to their utility for a business game, the subjects encountered in groups **G1** to **G3** can be rearranged as follows:

- **Basic**: Mathematics, Statistics, Computer Science, Portuguese, Communication and Expression;
- **Conceptual**: Law, Economics, Philosophy, Management Theories, Sociology, Psychology, and Systems.
- **Professional**: Planning, Materials, Production, Marketing, Finances, Accounting, Human Resources.
- **Management**: Business Creation and Development, Business Management, Small Business Management, Leadership and Decision Process, Entrepreneurship, Industrial Organization, Business Management Games.

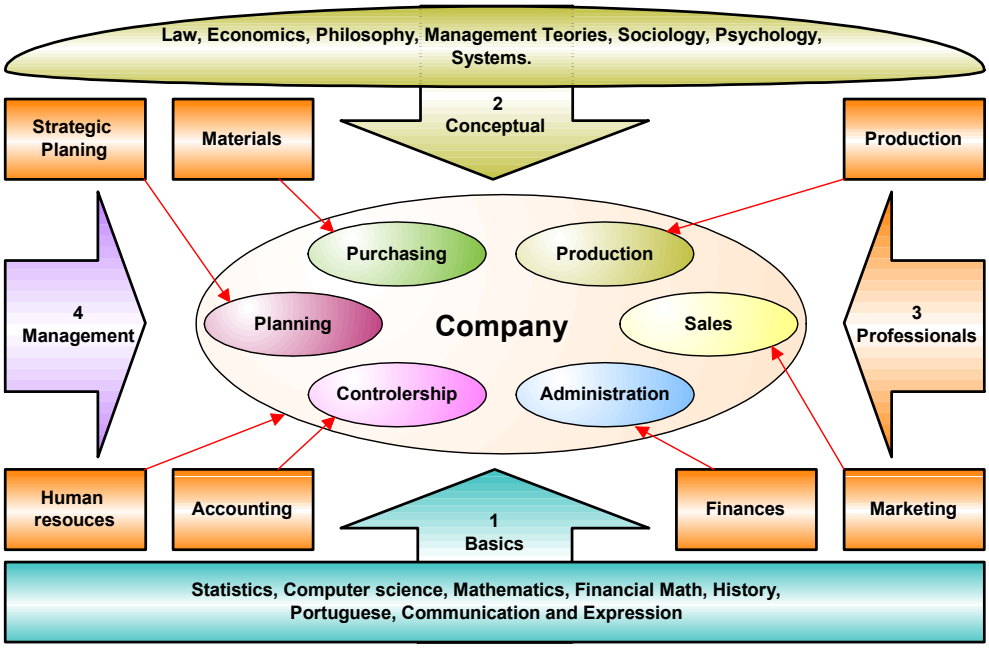

Figure 1 – Subjects relating to areas of a Company

Source: based on the content of each subject and its use in business (Marques, Fº, 2001, p. 100).

One application of these subjects is seen in "Figure 1" where the 1) **basics** (at the base of the figure) serve as support for the action of a business' management; 2) **conceptual** subjects act as a cover comprising

more general matters; 3) **professional** subjects are directly applicable in specific areas or in the company as a whole; and finally 4) **management** which is mainly intended to complete the teaching of administration and decision making to future managers.

The arrows in "Figure 1" represent the interconnections among the subjects in a Business Administration program and the internal areas of a business. These interconnections can be prioritized in accordance with their degree of applicability, as follows: **low** (basic and conceptual subjects); **intermediate** (subjects that involve a company as a whole - HR management), or **high** (subjects that are more 'professional' and which involve specific areas of a company – strategic planning, purchasing, production, sales, administration, or accounting).

These subjects are equally present in a company's relationship with other entities in its environment, such as suppliers, competitors, customers, banks, government, unions, shareholders, and employees.

A Business Game that is used in a Business Administration program can, for example, simultaneously use concepts involving economic theory, strategic planning, production planning, marketing, finances, accounting, controllership, among many others, all in accordance with the game's focus or the emphasis that the teacher wishes to give to student studies.

It is important to note that the main focus of a Business Game is on a company's manager staff (intermediate), meaning at a **tactical** or **managerial** level as represented in "Figure 2", since **strategic** areas (business direction) executed by top management and **operations** (tasks executed by technical staff) involve specific activities that are not always considered in this type of game.

Higher education can be perceived as being organized in groups of subjects with basic/required or professional/complementary ends. These subjects with origins in diverse areas of knowledge are segmented and ordered to facilitate the teaching process. One proposed grouping (basic, conceptual, professional, and managerial) is arranged in accordance with their utility for a business manager.

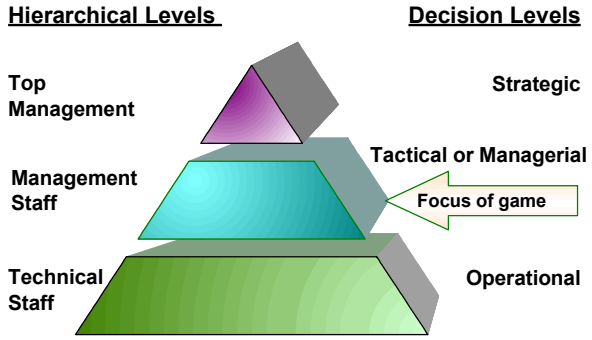

Figure 2 – Decision levels and the company hierarchy

Source: prepared by the authors

5. Teaching objectives using games

The combination of Business Games with teaching models for adults and the connection of this type of learning with the learning process is presented in Bittencourt's comments (2001): Through experience, the business game permits professionals to gain access to concepts, theories, and practices using the model that contemporary andragogy recommends – executing with involvement, interaction, and commitment, achieving as a consequence learning and growth. Furthermore, to attain these objectives of learning and growing, several steps should be followed.

To use the games for educational purposes, the first step is to establish clear objectives for the activity and link them to what will be done. These objectives, when aligned with the requirements of higher education, can be set forth as the goals that will comprise the pedagogical plan for a program of study or course using games.

To link business games to your objectives, the second step is to make students execute tasks that connect the technical content learned to the practical portion of the games that will be used. This is a difficult task, because it requires that both the teacher and the student remember concepts worked with in other subjects. One way to solve this problem is to inspire students to research these concepts, connecting them to the difficulties encountered in the simulated companies.

Other pedagogical objectives can be created in accordance with the type or focus of the game. For example, Risky-Business (2001), a company that markets games, claims that the use of this type of didactic-pedagogical tool has proven useful for users to:

- learn and improve their capacity to manage functional areas of the company;
- learn and improve their strategic management capabilities;
- improve their capacity to work as part of a team;
- achieve a global understanding of their organization;
- improve the quality of management decisions made;
- improve their ability to direct;
- be able to successfully lead individuals who are under their responsibility.

A teaching plan should formalize the pedagogical project, establishing teaching methods, required strategies, and the concepts that will be worked with. Connections can be established between subjects that are part of the Business Administration curriculum and areas worked on in a Business Game, applying the following degrees of usefulness: low (conceptual subjects), intermediate (basic subjects), or high (professional and management subjects).

6. Final comments

The use of games in undergraduate programs or for business professionals is normally planned in conformity with the desired objectives. A sixteen-hour course can be given in two consecutive days, in five consecutive half days, or in five weekly half-day classes. As can be noted, the dynamics are modified with each class strategy. In the first, the rapidness of decisions is a decisive factor for the results of companies and conceptual assimilation is reduced. In the second and all other cases, the time available for reasoning is longer, giving participants the opportunity to review or absorb concepts (Marques Fº & Pessôa, 2000).

Sixteen class hours is considered to be the minimum. Additional time can be used to study additional theoretical topics, depending on whether it is an undergraduate, graduate, or business training course.

Another factor is the number of individual participants with each company. If this number is less than three, the synergy expected in relation to the transfer of knowledge and experience might not occur. If the number is greater than five, it is possible that a participant could be left out. It is recommended that groups be made-up of individuals with diverse business profiles, such as production, marketing, administration (accounting), and finance, creating a simulated organizational chart.

Finally, individual behavior is different in this type of class and it is possible to note the following:

- The teacher does not need to give lectures;
- The teacher does not need to perform a roll call;
- The teacher is only sporadically active in class;
- Students do not skip class and arrive on time;
- Students are always motivated (by the pressure of the game);
- Students speak quietly and remain at their work stations in an orderly manner;
- Students perform diverse tasks outside of class;
- Evaluations using written tests are unnecessary;
- Student groups keep their strategies to themselves and do not “cheat”;
- All are preoccupied with the objective and the end of the activity;
- When the class ends (game), students wish to continue;
- Students learn the content passed along in their own way, in an entertaining manner.

In this type of class, everyone always wins, since those who participate in the activities, those who help their colleagues, those who attempt to clear up doubts, those who study alternatives, those who understand the work model, are the ones who gain knowledge, making the teaching effective. The winners are actually everyone who learns!

Accordingly, the business game allows curricular integration and a multi-discipline approach that is diversified, integrated, and systematic in relation to all other college disciplines. Thus guaranteeing the formation of professionals with integrated and meaningful viewpoints who are qualified to work in a constantly changing globalized market.

7. References

BARTON, Richard F., (1973). **A Simulation and Game Manual**. Petrópolis: Vozes, 285p.

BITTENCOURT, Francisco, (2001) **A Business Game**. Available at <http://www.institutomvc.com.br/insight23.htm> Accessed June 2, 2001.

BORRÁS, Miguel A., (1999). Aires et al. Human resources as a key factor for development of the national agribusiness: the agro-industry production case. In: **Management & Production**. v.6, n.3, p: 282-291, Dec. 1999. Universidade Federal de São Carlos.

BRASIL, (2001). Ministry of Education. Ministerial Order no. 010 of Jan. 4, 2001. Sets forth details on the National Test for Business Administration Programs. **INEP- Instituto Nacional de Estudos e Pesquisas Educacionais**. Available at <http://www.inep.gov.br/enc/provao2001/diretrizes/Administração.htm>. Accessed Jan. 24, 2001.

HUIZINGA, J., (1993). **Homo Ludens: the game as an element of culture**. 4.ed. São Paulo: Perspectiva, 243p.

KIRBY, Andy, (1995). 150 **Training Games**. São Paulo: T&D, 320p.

KRISCHKE, Jeannine L., (2000). Andragogy. In: XI Santa Caterina State Congress on Human Resources ABRH-SC – Santa Caterina State Chapter of National Human Resource Association. 2000. Joinvile. **Electronic files...** available at <http://www.mlim.com.br/~abrhitj/andragogia.htm> Accessed Dec. 14, 2000.

MARCONI, Marina de A. (1982). LAKATOS, Eva Maria. **Research Techniques**. São Paulo: Atlas, 205p.

MARQUES Fº, Paulo A.; PESSÔA, Marcelo S.P. (2000), Business Games for Production Management. VII. In: Production Engineering Symposium of the Universidade Estadual Paulista, Bauru. **Electronic files...** Available at <http://www.bauru.unesp.br/acontece/anais2000.html>. Accessed Nov. 30, 2000.

MARQUES Fº, Paulo A., (2001). **Business Games: a strategy for teaching management and decision making.** São Paulo, 2001. 175 p. Dissertation (Masters Degree in Production Engineering) Campus Bacelar - Universidade Paulista.

MORAN, J. M. (2000). Teaching and innovative learning with audio-visual and television technologies. In: MORAN, J. M. et al. **New technologies and pedagogical mediation**. São Paulo: Papirus. 173p. p: 11-65.

OLIVEIRA, Ari Batista de, (2000). **Andragogy**. Available at <http://www.terravista.pt/Meco/4678/andragogia.htm>. Accessed Dec. 18, 2000.

PERRENOUD, Philippe, (1999). **Constructing competencies beginning at school**. Porto Alegre: Artmed, p.90.

RISK-BUSINESS, (2001). RB **Business Simulator**. Available at <http://www.riskybusiness.com>. Accessed Jan. 8, 2001.

SAMAGAIA, Rafaela R. et al., (2001). **Didactic Transposition: a train to the stars.** Universidade Federal de Santa Catarina - Centro de Ciências Físicas e Matemáticas. Available at <http://www.fsc.ufsc.br/~inspb/transp3.html> Accessed Nov. 5, 2001.

Keywords: Business Game, Simulation, Management Teaching.

- 10th IOSTE - International Organization for Science and Technology Education
- Symposium on "Rethinking Science and Technology Education to Meet the Demands for Future Generations in a Changing World"
- 2002, 28th July - 2nd August, Foz do Iguaçú, BRAZIL,
- Sub-Themes 3 - Teaching Practice.