



BUSINESS GAME BOOKLET

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TABLE OF CONTENTS

| | |
|--------------------------------------------------------------|-------|
| The Business Game..... | p. 7 |
| The innovative aspects of the Business Game..... | p. 8 |
| Learning objectives..... | p. 8 |
| Learning outcomes..... | p. 9 |
| Learning methodology | p. 10 |
| Teaching method..... | p. 11 |
| The use of the Business Game in the learning process..... | p. 13 |
| Target group..... | p. 14 |
| Business Game fields of application..... | p. 15 |
| Annex – Technical specifications..... | p. 19 |

The Business Game

The Business Game is a serious game simulating the management of a virtual company acting on a competitive market. The game deals with a competition and the teams involved are in charge of running a company. Players represent the market and take decisions across areas of business management: marketing, research and development, supply, logistics, production, finance, human resources, retailing. The players' decisions are analyzed and processed in order to show the overall business trends.

The Business Game is a tool allowing to recreate real life situations where players have to reach a final goal applying appropriate strategies and specific knowledge while complying with a set of rules.

The Business Game offers an unusual and amazing virtual experience that highly motivates the user, sharpens his/her visual perception and attention as well as improving memory.

The Business Game lies on the theory of 'learning by doing' in a virtual risk-free environment (for example, the players cannot lose money).

The Business Game gives the chance to internalize a real experience: the learning is much more immediate and thus allows the users to get better results if compared to the mere passive acquisition of notions during a face to face lesson.

The Business Game creates a mathetic situation based on learning: the learner plays a leading role in a collaborative environment.

The innovative aspects of the Business Game

The Business Game is an innovative tool since

- the learner plays a leading role in the learning process, can enhance his/her own potentialities, mature more skills and competences, know and get ready to better meet labour market needs and indicators
- it is based on a methodology designed to apply problem solving techniques in real life situations in order to find out new solutions and at the same time develop operational, intuitive and logical competences
- it uses ICT to set out attractive and personalized approaches in an effective learning process.

Learning objectives

Serious games are important learning tools since they enhance imagination and motivation. The possibility to play given to people both on an individual and collective levels provides a stimulus and very intense emotional rewards.

In detail, the Business Game allows to

- learn business management techniques
- have a better orientation to a strategic approach and understanding of issues concerning various business functions
- become familiar with risky and uncertain situations
- improve decision-making skills concerning the timeliness and effectiveness of the decisions taken
- develop participants' soft skills (leadership, team-working...).

Learning outcomes

From a pedagogical point of view, the Business Game supports the development of learning outcomes in terms of:

- Soft skills
 - Relational skills acquired in significant learning contexts that encourage collaboration processes. Choices and decisions are shared as well as achievements and failures making the classroom climate more positive, interesting and profitable
 - Problem solving skills (based on five stages): problem posing, problem setting, problem solving, decision making and decision taking
 - Autonomy and responsibility in taking decisions and being in competition on a real labour market, even if a virtual one
- Knowledge in the following fields:
 - Logic, mathematics and computer science
 - Marketing strategy
 - Business management
 - Financial Management (in Estonia)
 - Business Administration (in Estonia)
 - Personnel Management (in Estonia)
 - Economics (Romania)
- Competences since the virtual environment allows to
 - implement them when performing real tasks
 - test the level of their command and transferability to different contexts
 - design and implement Business Plan for SME-s
 - give students the opportunity to apply theoretical concepts dealing with different economic subjects and make connections between them.

Learning methodology

The Business Game is based on a methodology covering the three learning areas: knowledge (to know), skills (to be able to) and behaviours (to know how to be).

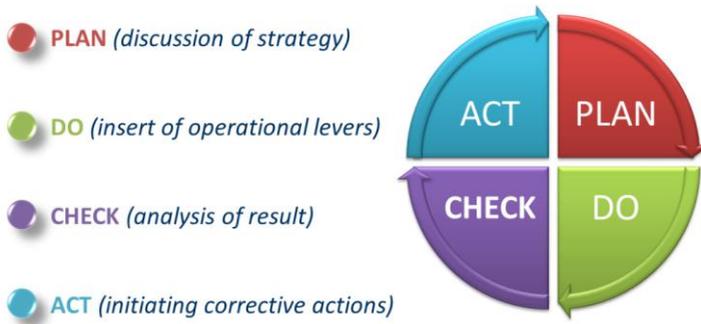


Figure 1

The Business Game model follows Kolb theory of experiential learning (Kolb Cycle). The cycle comprises four different stages of learning from experience and all stages must be followed in sequence for successful learning to take place:

- concrete experience aimed at a complete involvement in new situations
- reflective observation aimed at the analysis of the experiences through a multi-view observation
- abstract conceptualization aimed at integrating concepts and theories
- active experimentation aimed at testing the hypothesis through an action that causes effects, new situations and problems. Then, a new cycle can start.

Teaching method

In the Business Game the teaching method lies on five steps

- an initial presentation that explains what is a business game, describes game procedures and the scenario
- a “test tournament” (usually consisting of 2 playing periods) that is useful to allow the player to become familiar with the game
- a short debriefing that describes the tournament trend as well as providing useful information to users in order to improve their strategy with a view to the official competition
- the official tournament (usually 6/8 playing periods) where the participants divided into teams will defy each others on the same market
- a final debriefing that is aimed at analyzing market trends, right choices and mistakes. Due to the importance of the Business Game in the learning process, the debriefing is very useful to understand and evaluate the decisions taken during the competition.

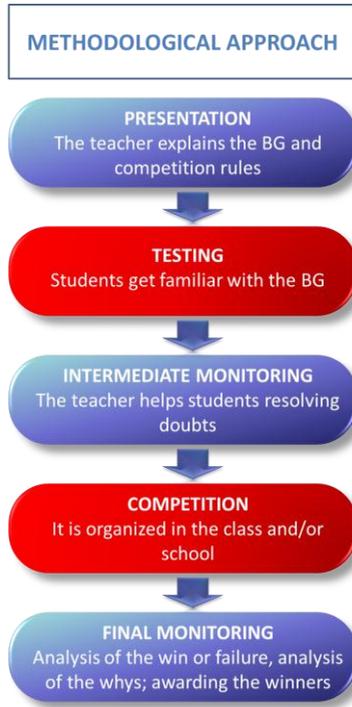


Figure 2

The Business Game methodology refers to the four types of didactic mediators identified by Elio Damiano:

- symbolic mediators: face-to-face lessons
- iconic mediators: use of images, graphs, charts
- analogical mediators: dramatizations, simulations
- active mediators: learning by doing.

The use of the Business Game in the learning process

The use of the Business Game allows to

- encourage a collaborative working environment in order to reach a common specific goal (winning the competition)
- overcome learners' cognitive difficulties and help them broaden their horizons even though in a virtual environment and through blended training
- ensure immediate and systematic feedback: the mistake is a learning step that does not distract from the final aim
- carry out "lab" activities
 - promoting a working method mainly based on problem solving techniques
 - resting on any intentional activities aimed at achieving a real and concrete outcome through a set of procedures and specific activities managed by the learner and important for him/her
 - consisting of well-constructed and motivating activities that involve the pleasure of discovery in different and complex contexts
 - encouraging a closer relation between schools and companies (not in France, Netherlands and Poland)
 - promoting teacher/trainer involvement in order to improve learners' different learning styles. Sometimes it is necessary to involve more teachers/trainers to explain a subject area from different points of view
 - providing a systemic business view.

Target groups

- The learner should identify and analyse data provided by the system and take the most appropriate and right decisions. Thus he/she plays a leading role in the learning process: the learner is responsible for and autonomous in taking decisions, learns by doing and cooperates with the others.
- The teacher/trainer should not explain learning contents in a mechanical way, but stimulate the learner. Indeed the teacher/trainer becomes a learning catalyst and he/she provokes reactions but doesn't directly intervene; the teacher also encourages learning and coaches the learner along his/her learning pathway to acquire the knowledge and the necessary competences to autonomously play the game. The trainer should mediate conflicts and help students find solutions to problems and identify strengths and weaknesses.
- All the partners and stakeholders involved in the testing phase: workers in business and administration fields (in the Netherlands also retail, wholesale and textile industry); individuals wishing to re-train; policy makers who might consider the Business Game as a best practice to be applied in different sectors and contexts in order to foster the development of entrepreneurial skills.

Business Game fields of application

The Business Game was designed to be used by learners from Business Management, Finance, Economics and Accountancy areas, situated at a level from 4 to 5 of the National and European Qualification Frameworks (NQF and EQF), meaning that the previous knowledge and understanding of business management, financial and economic issues are essential to allow learners to make the best use of the Business Game. So, as long as these pre-requirements are met, the Business Game can be used to develop the knowledge and skills identified in the sections above.

The Business Game can be used in different educational and training contexts.

What follows is a brief description of these application fields in the partner countries

Estonia



- Secondary education, EQF levels 4 and 5
 - Gymnasium economy specialized classes
 - Vocational Schools
- Applied higher education, EQF levels 5 and 6

France



- Secondary education on level IV (EQF 4) :
Première/Terminale STMG, Bacs professionnels tertiaires
- Technical education on level III (EQF 5) : BTS/DUT
- Vocational training through apprenticeship on levels III and IV (EQF 5 and 4)
- Adult continuous training

Italy



- Secondary education (upper secondary schools) – fourth and fifth years
 - in technical colleges – economic sector; in vocational schools – business services; lyceum – social sciences
 - also in other technical colleges – technology, high and vocational schools
 - in CLIL (Content and Language Integrated Learning) learning pathways
 - in school-work experiences, in particular in *Impresa Formativa Simulata* (IFS) learning pathways.
- Non-university higher education
 - IFTS - *Istruzione e formazione tecnica superiore*
 - ITS – further education two-year courses in the following six technical areas:
 - ❖ New technologies for ‘made in Italy’: mechanics, food industry, business support, information and advice; fashion; building
 - ❖ New life technologies, Energy efficiency, Sustainable transportation; Innovative technologies for cultural heritage – Tourism; ICT.

The Netherlands



- Secondary vocational education (mbo) on levels 3 and 4 (EQF 3/4)
- Secondary vocational education on level 5 (Associate Degree), SME
- Higher education (hbo) on level 5
- As learning method on entrepreneurship (Certificate Entrepreneurship CE)

Poland



- Upper secondary school level, especially
 - technical schools
 - lyceum- entrepreneurship classes, economy classes
 - vocational schools

Portugal



- Initial vocational education and training courses at level 4 (NQF and EQF) targeted to Young People or Adults, namely in the following training typologies:
 - Education and Training Courses
 - Apprenticeship Courses
 - Professional Courses
 - Specialised Artistic Teaching Courses
- Post-secondary non-university higher education (Technological Specialisation Courses – level 5 NQF e EQF)
- Other training courses (ex: continuous vocational education and training) as long as learners comply with the pre-requirements mentioned above.

Romania



- Lower and upper secondary education
 - economic colleges
 - technical colleges
- General secondary education (since Entrepreneurial Education is studied here)
- Higher education
 - economic
 - technical

Slovenia



- Secondary education (secondary schools) – all programs which include training in the field of economic knowledge, business, entrepreneurship:
 - general secondary education - fourth (last) year
 - technical secondary education - fourth (last) year; business services
 - vocational secondary education - third (last) year
- Non-university higher education - in all study programs with modules related to economics, entrepreneurship, etc.

ANNEX

Business Game technical specifications

The program was developed in Java and uses a Servlet Technology through a Struts framework. The interface is written in HTML within jsp pages that exploit data obtained real-time by the framework. By this way pages can be interpreted by any web browser or platform.

The Business Game is based on a client-server architecture. An Internet connection and a browser (Opera, Internet Explorer, Mozilla FireFox, Google Chrome, Safari, etc) are required to access the software. The choice of this architecture and the object-based programming language (Java) has allowed to achieve the following goals:

- portability: the software, being an application available on the web, can run on any platform
- easy configuration: the software is parametric and thus easily customized according to customer's requirements.

The creation of this game as a web application has the great advantage of allowing a large number of users to be reached. The object-based programming language also greatly simplifies the testing phase.

The infrastructure to develop a web application is based on standard technologies such as:

- TCP/IP and http protocols
- 4 Layer architecture
- J2EE (Java 2 enterprise edition) development platform
- Object – Oriented development

The system is based on a multi-level architecture which allows to separate the users and the program. The basic features are: web technology, reliability, flexibility, ease of maintenance,

separation of the functions from data management and a strong attention to the interaction of the user (usability). The multi-layer architecture (Figure 3) is considered the best solution for developing multi-user applications.

With this type of architecture, the activity of the end user's computer can be reduced and the security of the data contained in the database server can be increased. The client, to preserve the integrity of data and, consequently, the proper conduct of the game, does not directly access the database server, but connects through a web browser to the web-server that interprets the various pages that the user sees on his/her PC. Only system administrators have access to the database and can modify the data it contains.

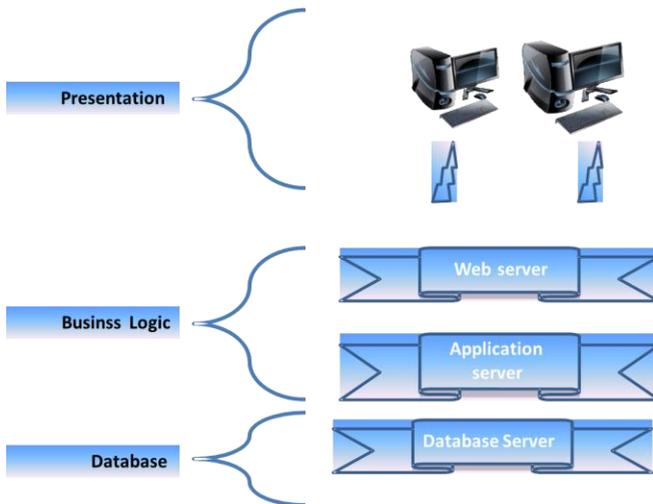


Figure 3: multi-layer architecture

