USE OF SIMULATION GAMES TO LEARN NEGOTIATIONS IN PROJECT BUSINESS

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**Abstract of thesis**

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**Abstract**

Negotiation and negotiation skills have an important role in project business, therefore it’s essential to teach the future project management professionals in order to achieve the skills and be prepared to the actual globalizing world. The purpose of this thesis is to create a simulation game in order to be able to teach these negotiation skills in a classroom environment.

The approach of this research is use the literature review about the effectively of using games for teaching and how to design a game with educational purposes in order to create a useful and motivating game. In addition, the negotiation analysis approach and all the qualities that a negotiator need in the different phases of the project are studied. Based on the results of the literature review, a definition and implementation of a project simulation game is created.

The results of this thesis present a way to effectively teach the skills that a negotiator need through a simulation game. The game can be used in project management educators, and the process of designing the game can be repeated for other subjects besides project negotiation.

**Key words:** Business game, simulation, motivation, games, educational game, teaching, negotiation, project negotiation, negotiation analysis approach.
La Negociación y las aptitudes necesarias para negociar tienen un importante papel en los proyectos empresariales, por consiguiente es esencial educar a los futuros profesionales de la gestión de proyectos para que adquieran estas aptitudes y para que también estén preparados en el actual mundo globalizado. El objetivo de esta tesis es crear un juego que simule una negociación real con la finalidad de poder enseñar lo que es la negociación en un ambiente educacional.

Para llevar a cabo este proyecto se ha utilizado literatura sobre la efectividad del uso de juegos educativos en la enseñanza y como diseñar un juego con fines educacionales para así motivar a los estudiantes. Además, también se a utilizado literatura sobre la negociación y las cualidades que debe tener un buen negociador en cada una de las fases del ciclo de vida de un proyecto. A partir de los conocimientos adquiridos, se define y se implementa un juego que simula la negociación en proyectos empresariales.

Los resultados obtenidos presentan una forma efectiva de enseñar a los estudiantes las aptitudes de un negociador mediante el juego creado. El juego puede ser utilizado por profesores especializados en enseñar la gestión empresarial, e incluso pueden repetir el proceso utilizado para crear el juego con el objetivo de crear uno nuevo para otros temas existentes en la gestión empresarial.

**Biblioteca**

**Información adicional**

*Palabras clave:* Juego empresarial, simulación, motivación, negociación de proyectos, negociación, análisis en la negociación, juegos educacionales, enseñar a negociar.
The author of the thesis realizes how much she has learned since she started four months ago. Not only about the negotiation and how useful games are, but also about how to design research, create a game and how much time it takes to test it. The writing of a master thesis requires a good organization and a lot of motivation. The author has learned to plan her time and to schedule along twenty weeks all the research and activities to be conducted. Besides this, she has had fun working on it. Finally, she believes to have gained a deep understanding about the theory of business negotiation. She wishes and hopes to be able to use all this knowledge in potential future projects, and later on, in challenges she might face during her professional career.

I Would Like To Reserve A Special Thank You To The Following People:

- Most importantly my Supervisor Prof. Jaakko Kujala for proposing such an interesting topic to me, Business Negotiation. And also to Prof. Osmo Kauppila who was there for any doubts and supporting me.

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- Finally, to Berta for being there every day.


**Abbreviations**

NAA – Negotiation Analysis Approach

GT – Game Theory

DA – Decision Analysis

BDT – Behavioral Decision Theory

BATNA – Best Alternative To Negotiate an Agreement

ZOPA – Zone Of Possible Agreement

ELT – Experimental Learning Theory

B1 – Buyer one

B2 – Buyer two

C1 – Contractor one

C2 – Contractor two

C3 – Contractor three

C4 – Contractor four

C5 – Contractor five

RPGs – Role Play Games
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1. Introduction

This chapter introduces the master thesis by defining the background, the problem and aim of the research and how the thesis is structured.

It tackles questions about the value of negotiation and how teaching is not aware of its importance. This research will show that the use of games for teaching is not a new technique; it is also suggested that it may be one of the most dynamic and useful ways to learn specifically because students enjoy playing games. In addition, this study will indicate the effectiveness of games for educational purpose and simultaneously provide a platform for how we are going to use the basis of this information to resolve the problem of teaching negotiation. The structure of this thesis will be defined towards the end of this section.

1.1. Background

Nowadays, the planning and implementation of projects have become common activities in companies, and if they want to succeed and reach their goals they should know how to negotiate. Many people assume that either people have the natural skills to know how to negotiate or it is generally accepted that these kinds of skills can only be learned through experience and observation. This is the main reason why in the last few decades’, the topic of project negotiation has not particularly attracted much academic interest and most likely why there is a lack attention from tertiary institutions with regards to teaching how to negotiate.

The study of bargaining has been discussed for many years due to the important role of know how to negotiate have in life in a general approach, and especially for any project. All these studies have defined negotiation as an important field of study and a universal method of human decision-making process (Briggs, 2003; Murtoaro & Kujala, 2007; Raiffa, 2002; Sebenius, 1992).

Because of its importance, today’s many business schools have being demanding changes in the way of teaching; well know as “Learning by Doing” (Ben-zvi, 2007). Consequently, there has been more recent research talking about how to teach the art of negotiation and business studies in universities. These researches are based on simulation of a real situation in which the students are in a negotiation of a business project but what is a simulation? A simulation experimental environment is a simplified and artificial situation that contains enough illusion of reality to include real world responses by those participating in the exercises (Keys & Wolf, 1990). So in a
few words, these researchers use teaching via simulation games with the purpose that the students acquire skills and apply their theoretical knowledge on negotiation (Garris, Ahlers, & Driskell, 2002; Pacios Álvarez, Vargas Funes, Ordieres Mere, & Cobo Benita, 2011).

According to Silvia V. Bello, Jorge B. Weber and Juan Salvador P. Lomelí (2004) in the article *Los juegos didácticos como factores de desarrollo de comunidades de aprendizaje*:

“The game can play at least three roles in the process of learning to become a means of exploration and expression, a tool for the organization and implementation skills and a factor of socialization and integration”

In addition, games are such a tool to improve student motivation in learning because traditional classroom tends to be didactic and, therefore, when students don’t find the course material attractive they become less motivated to learn. So the game-based learning is a good teaching strategy for this field (Jong et al., 2013).

In the end, games looks like that have really good qualities for teaching how to negotiated and prepare the future generation to reach good agreements and succeed in the actual globalizing business world. According to a Plato’s adage in the article of Tal Ben-Zvi (2006) in *Using Business Games in Teaching DSS* it is possible to see how useful games are:

“You learn more about a person in an hour of play than in a year of conversation”

1.2. The Game

According to Lee, J. J. (2010) *Review of game-based learning: An Immersion Process Perspective* a game is:

“What is a game? It is a combination of procedures of human mental activities and body movements which has long being recognized as a fundamental component in human social and cultural development”

Games are as old as man, play has been a learning technique living through times but the official recognition of their educational value has a long way to go. If we look back, we realize that the game is critical in the life of any person so when you’re a kid the majority of the things you learn it is because you are playing. For instance, when a kid is playing for first time with a ball he is not only playing, he is learning the touch of a
ball, the sound when it hits the floor, etc. In the same way that this happens when you are a child, it is happening when you grow up but, the majority of times, we don’t realize that we learn something through a game.

Now, we should answer the following question: “Why we should say that games are an important factor in our learning process?” Personally I believe that when you are doing something that you really likes and then remembers; it is because you are immersed in the activity, i.e. your attention is 100% on that activity. And this is the feeling you get when you play a game that you really like, for a short period of time you have the same feeling as in real life.

According to Lee, J. J. (2010) Review of game-based learning: An Immersion Process Perspective, (Table 1), 24–27 the definition of immersion and their effects in learning are:

“Immersion is the term to describe the psychology and physical states of a person when he/she attend fully in events or activities”

“The immersion experience had significant effect to learners’ subjective feelings of satisfaction toward the instruction and the learning system”

To come to the point, we could say that games are very useful in education for two reasons: first, if the students like the game they are going to be motivated and immerse in it; second, students generally seem to prefer games over other more traditional classroom.

1.2.1. Effectiveness of Games for educational purposes

At present, more and more is being invested in educational games because when you're little is when you have the ability to absorb and assimilate much more knowledge and skills. Furthermore not only is increasing the use of games for teaching children, also is emphasizing the use of games in school and university because it has been shown that the activities based on games allow addressing important issues such as: participation, creativity, aesthetic taste, sociability, behavior, etc. (Morote Magán & Labrador Piquer, 2008). The game has also a motivational support purposes, diagnosis and evaluation (Aleven, Myers, Easterday, & Ogan, 2010; Jong et al., 2013; Villarreal Bello, Barojas Weber, & Pérez Lomelí, 2004). Games provide learning environments which allows the students to discover new rules and ideas rather than memorizing the material presented to them (Siewiorek, 2012). Finally, they also give to the students
the chance to practice theories and techniques learned in class, but we must not forget that each game has clear learning objectives.

As we mentioned above there have been several studies of the effectiveness of using games as a means of learning vehicle. All these studies have a common goal: demonstrate de effectiveness of games for educational purposes, which it is really positive for classes that need motivation because the students are not really motivated in these skills, or maybe because they cannot see the usefulness of study this. For example, the study made it in the UPM in 2011 by Antonia Pacios, Jose Ramón Cobo, Isabel Ortiz and Jose M. Vargas where they simulate are real situation of a real negotiation arrives at next conclusion:

“Learning by playing is an effective way to make student learning in the subject area of negotiation and it can be an important tool for improving engineering student performance as well as motivating and enhancing other no technical abilities. The combination of playing and training has verified that the students with no special good negotiation skills at the beginning of the experiment have even reached better final results that those ones with natural negotiation skills”.

This learning approach is valuable and more productive than lecture approach, i.e. traditional classrooms. Thank to this research and others, it is possible to say that games with educational purposes are an excellent tool to test the understanding of theory, to connect theory with application, and to develop theoretical insights (Benzvi, 2007). Although it looks that education by games it is only useful for the students, games also transform the teacher turning him/her in a coach and guide in the classroom (Kikot, Fernandes, Magalhães, & Costa, 2013).

1.3. Aim of the research and research questions

The purpose of this thesis is to create a simulation game in order to be able to teach these negotiation skills in a classroom environment.

What we are looking with this business game is provide students the opportunity to take on the roles and responsibilities of executives, to become deeply involved in decisions faced by real people in real organizations, to feel the pressure and to recognize the risks. The objective for this constructive research is the following:

Create a simulation game so that students are motivated to learn the art of project negotiation in the different parts of a project cycle and acquire the skills to be a good professional in project negotiation
The objective can be divided into sub-questions:

- Which type of games motivates students?
- How games motivate students?
- What are the characteristics of a good educational game?
- How do instructional games affect learning outcomes?
- What are the learning objectives of a project negotiation simulation game?

Contribution from the research perspective is to find a game for students and teachers to make easy the way to learn and teach how to negotiate in a project. Also it could be the base to create another game to teach different topics in business management.

1.4. Overview of the structure

The material is organized into the following subsequent sections of discussion.

- A literature review of what negotiation is from its roots, what skills should have a good negotiator, when the negotiation appears on the life cycle of a project and its importance in the business world. It also defines the characteristics of a game to be as educational and how the game for teaching negotiation must be designed in order to motivate the students.

- The presentation of the empirical section which consist in the description of the “Game” with its rules and all its characteristics.

- The testing arrangement of the simulation game is explained. An example of the games sessions and also it is shown how testing the game helps me to improve the design and let me find a potential future research.

- The analysis of the results of the empirical research

- Market test is carried on by experts in order to validate the results of this constructive research.

- Concluding remarks in terms of key findings and a personal approach.

- References
2. Literature Review

The literature review is structured as follows. The first section sums up all the knowledge gathered from existing literature, which tackles about topics relevant to this thesis. First, an insight of what negotiation is and a brief description of the qualities and skills a negotiator should have. Second, the negotiation analysis approach. Finally, it looks into the importance of negotiation in the cycle life of a project. The next section turns to discuss how do students learn and get motivate through simulation games. The last major section of material focuses on defines how to create a game with educational purposes and which options do we have.

2.1. Multiple definitions of Negotiation

Negotiation is a very important fact in whole life activities, that’s why you could find many ways to define it.

Negotiation can be defined as a process of communication back and forth with the purpose of reach a joint agreement about different needs or ideas (Acuff, 2008, p. 6). It is communication between two or more persons who are motivated to converge on an agreement for mutual benefits.

In the context of a project, negotiation is a technique for resolving conflicts between project stakeholders and demonstrates how ends up with satisfactory solutions (Anthopoulos & Xristianopouloi, 2012).

But in the context of Project management, because as we know negotiation became a key aspect of engineering work and projects, project negotiations are meetings in which the work between the customer and the supplier, the price to be paid for it and all the decisions which affects their goals and expectative are agreed. For this reason, the ability of engineers and managers to carry on a negotiation is crucial for the success or failure of project and business. Moreover, in a real project you have a lot of stakeholders so you have to bear in mind that satisfy all parties it is a big challenge, because negotiation also involves bringing out different point of views and each parties have to understand what the others want and how they want in order to study the best solution and satisfy all of them.
According to Fischer, Ury, & Patton, 1991 in *Getting to Yes*:

“The reason you negotiate is to produce something better than the results you can obtain without negotiating”

2.1.1. Common characteristics in negotiation

As we said before negotiation is an important part of our life, unless our quotidian negotiation are not the same as a business negotiation all of them have a similar structure (Anthopoulos & Xristianopouloi, 2012; de Souza Briggs, 2003; Murtoaro & Kujala, 2007; Sebenius, 1992):

- There are two or more parties involved, and each one has a leader team.
- These parties have their own goals, requirements, needs, etc. so there is a conflict of interest between them.
- All parties want to gain better benefits, so it is expected a “given and take” attitude.
- It always exist psychological factors that can affect to the negotiators.
- Sharing of information, honest or not.
- Negotiation starts when de department of sales or the seller make the preliminary bid for the project, and it ends with the signing of a contract

2.2. Skills to be a good negotiator

Project negotiation is not something that is taught in all universities or degrees, there is no subject about it. Apparently, the reason that the negotiation is not relevant in education is because it is believed that the skills to be a good negotiator are innate or something learned through experience and observation. There are other myths about the skills of the negotiators, such as they need to be either tough or soft (MIT Open Course Ware, 2011).

It is known that having power position during a business negotiation is crucial so thus negotiator must have a collection of interpersonal and communication skills.
<table>
<thead>
<tr>
<th>SKILL</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>Problem analysis</td>
<td>They need to know how to analyze a problem to determinate the interests of each band.</td>
</tr>
<tr>
<td>Active listening</td>
<td>They have to listen carefully to the other party during the meetings in order to don’t forget anything without plan and contract. It is better to stay more time listening.</td>
</tr>
<tr>
<td>Body language</td>
<td>Ability to read body language</td>
</tr>
<tr>
<td>Emotional control</td>
<td>Ability to keep his emotions under control during the negotiation, a negotiator has to leave all their feelings away. If negotiators don’t control their emotions, negotiations could degenerate so that both parties end with dissatisfy outcomes (Elfenbein, Tan, Aik, &amp; Der Foo, 2004).</td>
</tr>
<tr>
<td>Verbal communication</td>
<td>Communicate effectively and clearly. Negotiator has to express what he want and how.</td>
</tr>
<tr>
<td>Teamwork and collaboration</td>
<td>In big project it might be a group on negotiators which they know how to work together and also be trust and honest.</td>
</tr>
<tr>
<td>Decision making ability</td>
<td>They have to act decisively. There’s no need to make an immediately decision.</td>
</tr>
<tr>
<td>Interpersonal skills</td>
<td>Negotiators have the interpersonal skills enough to maintain a good working relationship.</td>
</tr>
<tr>
<td></td>
<td>Negotiators have to be patient and the skill to manipulate and persuade with a positive atmosphere (Emotional intelligence).</td>
</tr>
<tr>
<td></td>
<td>Ability to stay calm under pressure.</td>
</tr>
<tr>
<td></td>
<td>Common sense, that not means they always rely on intuition because behavior is often influenced by the atmosphere and environment.</td>
</tr>
<tr>
<td></td>
<td>Leadership skills</td>
</tr>
<tr>
<td>Ethics and reliability</td>
<td>Trusting atmosphere.</td>
</tr>
<tr>
<td></td>
<td>The skill to execute on his promises.</td>
</tr>
<tr>
<td>Creative</td>
<td>It’s important for find solutions or answer for the multiple issues in a negotiation.</td>
</tr>
</tbody>
</table>

Table 1: Definition of the skills that negotiators should have
All these qualities are necessaries and also it is crucial to know when it is the perfect moment to use them. Moreover, the negotiator or team of negotiators never has to show how they want whatever the other party it is offering, for instance if you want to buy a classic car you never have to give an impress that your supplier is your only choice because as this you are demonstrating weakness and then the supplier can take advantage of your situation.

Both parties should nominate a person responsible for the negotiations; normally for the supplier is the sales manager and for the customer is the purchasing or investment management (Artto, Martinsuo, & Kujala, 2011). During the meetings, team members should avoid talking at the same time and should avoid unnecessary correction of comments made by the other members because such comment could produce confusion in team’s message and show that the leader does not control the group.

### 2.3. Negotiation Analysis Approach (NAA)


> “Negotiation analysis seeks to develop prescriptive theory and useful advice for negotiators and third parties. It generally emphasizes the parties underlying interests (as distinct from the issues on the table and the position taken), alternatives to negotiated agreement, approaches to productively manage the inherent tension between competitive actions to “claim” value individually and cooperative ones to “create” value jointly, as well as efforts to change perceptions of the game itself”

Sebenius was not the first one researching about the negotiation analysis so the first overall synthesis of this field was in 1982 in *The Art and Science of negotiation* by Howard Raiffa.

The “negotiation analysis” has its roots in Game Theory, Decision Analysis and Behavioral Decision Theory. But these three theories alone are not enough for the prescriptive study of negotiation, but the approach use important aspects.

- **Game Theory (GT)**

Over the years, Game Theory has been studied by many authors in order to understand the behavior in negotiation. Importantly negotiation behavior has evolved due to the fact that the negotiations of previous years are not the same as today. The
The introduction of new technologies and globalization in the business world has made the negotiation and everything involved develops. For this reason, the analysis of negotiation has been studied for many years, and in all these studies, NA has always been based on the GT.

Game Theory began in 1944 when John von Neuman and Oskar Morgenstern published “Theory of Games and Economic Behaviour”. One early synthesis about it was made in 1957 by Luce and Raiffa Games and Decisions. Game theory provides a logically consistent framework for analyzing Interdependent decision-making (Murtoaro & Kujala, 2007). It makes common assumptions in all bargain analysis, such as completely “common knowledge” of the situation which is the game played (rules, beliefs of the players...) and full rationally of the players, in other words, how players act, assume that players have perfect memory and assume that all players maximize their payoff (Gerding, van Bragt, & La Poutré, 2000).

In short, we can apply game theory to many situations where the outcomes of one person depend on the decisions of others. That is what happens in all negotiation, so we can say that every negotiation is such a game. But the game of negotiation does not have defined rules, so we should say that negotiation is an “incompletely determined game” (Young, 1991, p. 2).

In these games of negotiation, players want to predict the outcome of strategic interactions by all parties with the purpose of reaching the equilibrium between parties. They also want to analyze situations that are not fully specified in advance because as we know to every action there is a reaction, but in business, it is not programmed. Consequently, one of the important insights of GT is focusing on others, i.e. put yourself in the shoes of others players (Brandenburger & Nalebuff, 2002).

Game Theory has been very useful for understanding repeated negotiations in well-structured situations; it was a useful guide for the design of negotiation and bidding mechanism (Sebenius, 1992).

There were many authors like Weber 1985, Myerson 1991, 1991 and Young 1991 who had investigated this theory.

- **Decision Analysis (DA)**

Decision analysis studies independent decision-making of a project, in other words, when your gains are not affected by the decisions of the others parties. It is necessary to predict what all the stakeholders want and also to structure all possible chance events, so then be able to study and analyze all the options separately in order to obtaining probabilities, risks and time. In short words, all possible actions that may
occur during a negotiation and its consequences are studied, in order to always have the best option defined, the best prescription.

It is must know interest of the others parties, in a negotiation analysis is sovereign (Sebenius, 1992).

- **Behavioral decision theory (BDT)**

Behavioral decision theory is related to how and why the people think, the way they do. Gives good predictions of how other projects stakeholders might actually behave.


"Wise prescriptions should ideally be based on good descriptions”

Negotiation analyst typically seeks to create prescriptive advice to one party given a description of how others will behave (Sebenius, 1992).

### 2.3.1. Elements of Negotiation Analytic Approach

All negotiations are different and it does not exist different elements for each situation, the fact is that the elements of negotiation analysis are universal.

These universal elements are divided in three categories:

1. **Structure elements of the negotiation**

The structure of the negotiation is defined by: interests, issues, positions, parties and Best Alternative To Negotiated Agreement (BATNA) (MIT Open Course Ware, 2011; Murtoaro, Kujala, & Artto, 2005; Murtoaro & Kujala, 2007; Howard Raiffa, Richardson, & Metcalfe, 2002; Sebenius, 1992).


"It is often important to distinguish parties underlying interests from the issues under negotiation, on which positions or stands are taken”
**Interests:**

Interest in a negotiation are not only economic, it also refers to the needs and priorities of the company. Teams should also focus on reputation, maintaining the environment, employees, etc. (Howard Raiffa et al., 2002, p. 198).

So the question that negotiators have to ask is: *What are the essential needs and priorities for the company and the other parties?* It is important understand the interests of the negotiations counterparts. The question seems a self evident question, but many negotiators fail to ask, consequently they may lose huge opportunities (Wheeler, 2002). It is also recommended ask “Why” questions, in order to explore the multiple interests.

Good negotiators know what they want, they put all their effort into it and they know how to achieve it without confounding it with a need. It is essential to know what the principled arguments are in order to use them at the table to support what we want.

Interest may change during the multiples negotiations, so if there is a change about anything related with the project negotiators must re-ask the question.

**Issues:**

In negotiating what is known as issues are the variables on which negotiators have to make a decision. In other words, negotiators have to decide on their needs and stakeholders needs. That’s one of the main reasons of the main analytic step is to study deeply the issues.

Typical issues in projects: Price, design Type, fulfill the schedule, etc. The number of issues depends on the complexity of the project.

Negotiators have to formulate the next question: What are the main issues to be negotiated? Which ones are tangible and which intangible? (de Souza Briggs, 2003)

Normally when you are trying to decide the answer o solution of any type of issue you usually find more than one option. Negotiation is not an exception.

**Position:**

As we said to find the solution of one issue we could find more than one option, and so many times the negotiator team is focused in resolve one issue only
with one of their option. So when a party shows that attitude is what it’s named as “Non Negotiable Position”.

When a negotiator is focusing on one option, he is focusing in position not in the interest. Consequently, without notice he is going to end the negotiation with a worst result. The important thing is not close the negotiation of an item but finish satisfied (Murtoaro et al., 2005).

For each issue it is necessary to have all the alternatives in order to satisfy all the interest. Therefore bargainers must explore all the alternatives to agreement (Raiff, 2002).

**Parties:**

As it has said in the point (2.1.) Multiples definitions of negotiation:

> “Negotiation is communication between two or more persons who are motivated to converge on an agreement for mutual benefits”.

Consequently, it is necessary to know how many parties are involved and all the stakeholders relate to the bargaining project. In addition, it is good to know the relationship between the parties, if there is or not competence, how the other parties work and if they have contacts.

Important questions that negotiators may think: Who are the real parties in the negotiation? What relationship or other history do I have with the other party/ies? What I know about their work style? What parties who are not in this negotiation might exercise an influence? Which parties are potential? (de Souza Briggs, 2003)

In a while we will talk about creating and claiming value during negotiations to “change the game”, and it is significant to set the “Value Net” which represents the relationships and dependencies between the different parties (Brandenburger & Nalebuff, 2002).

![Figure 1: Value Net](image-url)
Best Alternative To Negotiated Agreement (BATNA)

Why people want to negotiate is because they need some jointly kind of decisive action to satisfy their interests with better results than they did for themselves (Sebenius, 1992).

As we mentioned above, one of the purposes of negotiation is make an agreement, so negotiators should analyses all the alternatives to negotiated agreement but without focusing in position.

Therefore, the first thing that a negotiator may ask is: What is my best alternative to this negotiated agreement? In other words, what is my BATNA?

According to the article of Murtoaro & Kujala (2007) Project negotiation analysis we can define BATNA as:

“The best course of action that the party could pursue unilaterally outside the given negotiations”

So the good knowledge of calculate our BATNA is essential to know if we have to reject an offer or consider for accepted it. If the proposal bid it is under the best alternative we should reject it or if it is better we should consider. So we can define BATNA as a point of reference to compare offers (Vries, Leenes, & Zeleznikow, 2005). We can also say that BATNA is the point when a party has to decide for accept what the other party is offering or try to study other more attractive alternatives. This condition is known as individual rationality (Young, 1991, p. 3).

If negotiators have a good BATNA they might have more power during negotiation. Consequently they might reach greater results (Kim & Fragale, 2005). Studies indicates that negotiators who possess more attractive BATNAs, for instance when you are entering in a job negotiation with another offer from another company in hand, are less dependent on the main negotiation and also posses better power and better outcomes of their negotiation (Kim & Fragale, 2005).

According to Roger Fisher & William Ury & Bruce Patton (1991) in Getting to Yes:

“Developing your BATNA thus not only enables you to determine what is a minimally acceptable agreement, it will probably raise that minimum”
It is necessary to bear in mind that the BATNA of a party is not fixed, if during negotiation something change it is indispensable recalculate our BATNA and try to predict the new BATNA of the other part. It is not possible to make a wise decision about whether to accept a negotiated agreement unless you know your alternatives (Spangler, 2012).

2. Flow of the negotiation

Once all the structural elements are defined we should analyze their interaction. As we said negotiation is an unknown game, therefore when there are already defined its elements these will not always interact in the same way. In the real world of trading not all customers / sellers act in the same way, that’s why we should study the behavior of a negotiator needs.

The Negotiation Analytic Approach differentiate two classes of behavior that negotiators can exercise to craft an agreement: Creating and claiming value. In addition, during the bargaining it is important to define what Sebenius name as “the efforts to change the game”.

Creating and claiming value

Creating value in a negotiation is when parties seek to increase the payoff of both. Both parties make benefits, thus corresponds to an integrative bargaining process or it is also called “joint value”. This type of mutually-beneficial outcome is called a "win-win" solution (Murtoaro & Kujala, 2007). In a win-win negotiation all creative opportunities are surfaced and exploited and no resources or payoffs available to negotiating parties are left on the table (MIT Open Course Ware, 2011). From another point of view, it is possible to talk about a win-win solution if each party has a positive surplus unless it is a distributive bargain, because both do not have loses in the deal, although one have better results. This it’s what we call win-win agreements (Murtoaro et al., 2005).

Negotiators are interested in create value not only because they have shared interest, also because they may want a good relationship, exploit scale economies and dovetailing differences (Sebenius, 1992).

Claiming value is a process associated with distributive bargaining or individual gains, i.e. for a party to win the other must lose. This is what we call "win-lose" solution. It uses competitive tactics (Spangler, 2003).
As we see creating value improves both parties outcome, therefore create value has best results. The problem is that the cooperative strategies tend to undermine the competitive strategies, and the same in the other way. In addition, if negotiators are taking an open cooperative approach they could be seen vulnerable (Spangler, 2003). So in the end negotiators must manage the tension between creating and claiming value because these behaviors are not separable (Murtoaro et al., 2005; Sebenius, 1992; Spangler, 2003; Wheeler, 2002).

Managing the tension between creating and claiming value it is known as “The negotiators Dilemma” or “Prisoner’s Dilemma”.

According to H. Raiffa (2002) Negotiation Analysis p. 85:

“Tactic used to create a large pie may conflict with tactics designed to claim a large slice of pie”

According to David A. Lax & Sebenius, (1987) Manager as Negotiation pg.164:

“If negotiators come to see cooperatives moves as better than competitive ones, then the tension between creating and claiming can diminish”

Consequently, negotiations with effective results are those in which the negotiator is able to manage both the distributive and integrative components of the task. The game of business is all about creating and capturing value.
Efforts to Change the Game

As described above, the negotiation is an imperfect game due to it has no fixed rules. Consequently, creating and claiming value is not as simple as looks because the structural elements are not fixed. Moreover, parties often do not know what the exact payoffs of the opponent are but they simply have a perception of how it can be. Ultimately, the aim is to explain that the negotiators should take advantages of the structural elements trying to change them in order to reach better results and more power in bargaining, i.e. “Change the Game”.

Following, figure 3 illustrates the NAA:

![Diagram](image)

*Figure 3: Negotiation Analysis Approach* (Murtoaro et al., 2005)

In figure 3 we could see that claiming and creating value it is a way to change the Zone Of Possible Agreement, also named by the acronym ZOPA. Consequently, it is important for the negotiator which type of behavior should adopt according as the negotiation advances. But this is not the only way to change the game, we can also try to improve our BATNA in order to change the ZOPA or also by the strategy selected try to worsening others BATNA, that’s what we call: take purposive actions to change.

“Yet purposive action on behalf of the parties can change the structure of the situation and hence the outcomes”

When in this master thesis we talk about BATNA, we highlight that it is important and not easy to calculate it. And here, in this point we can see how important is control it and have a good perception of ours and others BATNAs because if a party change one issue or takes different actions, etc. we could identify their purpose and don’t fall into their trap, losing power and effectively.


“Successful business strategy is about actively shaping the game you play, not just playing the game you find”

“None of the players are fixed. Sometimes it’s smart to change who is playing the game. That includes you”

Related to the second sentence, there is a question that negotiator might think (includes their self) in order to change the game: Who should make the first offer? This question has a tricky answer because it could be a powerful anchor which makes you take better outcomes, or you can sink deep with it. For being the first bidding you have to be certain of yours counterparts BATNA because you can make an overly generous first offer or maybe you make a very low or high process which make the other parties don’t take you seriously (MIT Open Course Ware, 2011). In the end you must think if making you the first offer it is a good tactic to change the game.

In the negotiation there are different tactics that may be or not ethical depending on how you use them. What a good negotiator should do is to show the positive part of them and use it in order to don’t violate their principles, because unethical behavior often backfires and leave you worse.

These unethical or questionable tactics are:

- Lies
- Bluffing
- Puffery: exaggerate the value of something
- Nondisclosure: Keeping to oneself knowledge that would benefit the opponent without damaging your position
- Information exploitation: Using information provided by the opponent to weaken him, either in the direct exchange or by sharing it with others
It is important to know which is permitted or not. You do not need to divulge personal information, such as reservation price, but you are not permitted to lie about it (MIT Open Course Ware, 2011). Buffing, which is a type of lying, might be regarded as a game strategy, like in poker.

To sum up, changing the game is the way to succeed in business negotiation and we can do it varying the players, the scope, with tactics and creating and claiming value.

3. Outcomes

According to the game theory, an outcome is the result of the “players”. So in negotiation we can define the outcomes as the agreements between the parties. Not all the outcomes have to be monetarist.

The main outcome in negotiation is the contract. A contract appoints the agreement or treaty, whether oral or written, between parties who accept certain obligations and rights on a particular subject.

According to Murtoaro, Kujala & Artto (2005), Negotiations in project sales and delivery process. An application of negotiation analysis, an outcome in project negotiation is:

“The fixing of an option for each of the issues is combined to create a contract, which determines the payoff to each party as measured by the degree to which the contract satisfies the interests of the party”

When thinking the outcome, it is important to consider the view of the other party about their preferences and also the likelihood of meeting certain goals or interests (Vries et al., 2005)

In a negotiation between parties who know their BATNAS it is possible to calculate the Zone Of Possible Agreement, which is the set of reasonable contracts (Bargaining zone Figure 4). It refers to any contract which leaves parties better off than they would be if they fail to make a deal (Wheeler, 2002).
In real situations, has an accurate idea of the ZOPA it is hard for negotiators because first they must go on its foundations: BATNA. Therefore, they might calculate their BATNA and estimate the one of the other party in order to define the zone of possible agreement.

Other important concepts in negotiation are equity and the impact of contracts. Equity is the fairness in treatment, so if we define the scope of bargaining means that all parties are willing to sign the contract.

2.4. Multi-parties negotiation

We have seen so far all the elements and characteristics of negotiation and how a negotiator has to be prepared in order to arrive at the best solution. A reviewing of the key concepts is (de Souza Briggs, 2003, p. 19):

- Know your alternatives and improve them.
- Shape their perceptions through arguments.
- Make the first offer if your information is good.
- Be mindful of your own perceptions.
- Change the game to create a more valuable agreement.
- Do your homework: identify the stakeholders and learn all that you can about them, what they value, and how they view the world.

When we think about all these factors we are thinking in a face-to-face negotiation, but what happen when the number of parties increases? All of them become more important and consequently the negotiation process becomes more complex. This type of negotiation is what we know under the name of multi-party negotiations and
is usually governed by rules, often by voting rules with simple majorities (Howard Raiffa et al., 2002, p. 407).

This negotiation is concerned with more than two parties, including parties on the same side, on opposite side, neutral and other sides. Between all of them you could find different type of relationships: Primary party relations, co-operative relations, Non-co-operative relations inside, third party relations and entities providing support to a primary party (Crump, 2006).

Furthermore, multi-parties negotiation present dynamics that are quite different from the two party negotiations (de Souza Briggs, 2003, p. 19). First, get a general agreement depends on the opinion of all parties, so coalitions of two parties can now form. Second, the relationship and reputation are more important than in face to face negotiation because if you have a big network of relationship you can transfer information around the community in ways that can affect public support. Third in this type of negotiation shared decisions are required and we can find more problems of process management. Finally, the constantly changing of each party’s BATNA (de Souza Briggs, 2003; Susskind, Mnookin, Rozdeiczer, & Fuller, 2005).

What are coalitions? A coalition is a temporary alliance of separate entities or individuals who join together to seek a common purpose or goals. The coalition is the most common co-operative arrangement so it is when there is a co-operative relation (Crump, 2006). It is know that coalitions can strength your negotiation position.

According to Susskind et al., 2005 What We Have Learned About Teaching Multiparty Negotiation. Negotiation Journal, p. 396:

“Coalitions provide negotiators an opportunity to marshal influence that does not exist in two-party negotiations”.

In multi-party negotiations one of the problems of process management is how many and which parties need to be in agreement before the bidding process. Another problems could be how to promote an effective communication, how all parties are going to be coordinated and integrated and how are going to solve the impacts on the party’s BATNA caused by the decisions between all the parties and coalitions (Susskind et al., 2005).

In order to success in these negotiations you must identify if your party is weak. If it is, you have to consider forming a coalition with other to increase your bargain power. Then determine your party’s interests and goals at the negotiation table as well those of the coalitions you are dealing with. Finally form a strategy to deal with all the possible process management problems.
A key aspect of multi-party negotiation involves discussion of alternative ways to achieve goals (Traum, Marsella, Gratch, Lee, & Hartholt, 2008).

### 2.5. Importance of project negotiation in project management

Today in the business world we can find many buyers and sellers with whom we interact to form strategic partnerships in order to reach mutual benefits. It is necessary that each organization carefully consider all options in order to choose the one with more gains.

As it is mentioned above when a company has a project in hands, first of all it must study all the possibilities and alternatives to achieve their own objectives thence all parties should have a negotiation plan. Moreover it is essential know who is the competence and their relationship with the other side. After that it is necessarily to meet with all the parties involved and then try to make an arrangement, ergo start a negotiation process. When this negotiation process start is when you can find two situations.

On the one hand, both parties understand perfectly all their goals, what are they offering, in which way are going to do all the payoffs and all the things that need an agreement. This case, it is the ideal where both reach their scope and benefits.

On the other hand, when it is difficult to find a solution where both parties obtain the same profit. On this situation it is when negotiators have to use all their skills and capabilities in order to achieve the best possible outcome for me or my company, and also the other part gains. In this type of negotiation it is necessarily to follow the negotiation plan and also know more details of the other party, so with that we can make a strategy to make the other party feel as comfortable as possible with the purpose to make him be more flexible in their decision.

We always have to try to reach an agreement that is profitable for both and the only way to make this possible it is when both parties adopt a positive and supportive attitude. In addition, the negotiator must not only try to get an agreement, he must also develop a good relationship with the customer/supplier. By the way, with this approach negotiators can discover information from the other side that can tell us whether or not a supplier/customer it is potential for future business opportunities, in a few words the future of the company or person.

In the point “Definition of negotiation” negotiation is defined such a way to resolve conflicts. Consequently, during the life-cycle of a project conflicts may arise in every knowledge area (conflict are inevitable), so negotiation it is not a single phase of the
project, it is part of most of the phases of the project. Each project has a unique way to negotiate because all projects are exclusive and unique. In the figure 5 it is detailed the life-cycle of a project and all their phases.

![Figure 5: Phases of the project lifecycle](image)

### 2.5.1. Negotiation skills depending on the phase of the project lifecycle

During all the project lifecycle it could appear an issue to negotiate. Here I am trying to explain that depending on the phase it is possible to accurate which negotiation skills are more useful. The approach of my point of view is supposing that there is a company selling a product/project.

The project lifecycle is representing with three phases (Figure 5).

**Phase 1**

The first phase is where negotiators will have a more important role because it is the phase in which the product/project is going to be sell it. From the point of view of the supplier, this should do their best bid and have done an analysis of the situation to get to perform a contract. On the other hand, from customer’s perspective it is an investment for its needs so is the part where customer and seller are in collaboration, it is like an ongoing negotiation.

This phase is carrying on by the department of Marketing and Sales who has their negotiator or negotiation team; they must be with all their skills because if they don’t come to an agreement the supplier will probably suffer major losses. The “negotiator
supplier" must study how attractive is his offer from different perspectives and if it covers all their interests and customer’s issues (Problem analysis). For this, he must also understand perfectly what the buyer is looking for, their interests and express what they can offer (active listening and verbal communication), and of course, he must use their skills to persuade to convince the customer that his offer is the best (interpersonal skills), compared with competitors bids. As a negotiation is not only an exchange of information he should also be prepared to make creative decisions and always know how to separate their emotions (emotional control and decision making Ability).

On the other hand the "negotiator customer" should have clear what their interests are in order to choose the best deal. Therefore must have the ability to read body language to know whether he can trust the seller (Body language), listen very carefully to what the provider offers (active listening), control his emotions and be prepare to make decisions (emotional control and decision making Ability).

At this point, after negotiate they should have an agreement, i.e. a contract. In this contract they are going to sum up all the final decisions and negotiate which responsibilities they will have during the execution of the project.

**Phase 2**

Here we are talking about negotiations after they have already signed the contract. Therefore, we are talking about subcontractors.

Generally, when a company outsources the service of another is because they already have a good relationship with them. Therefore, in this case negotiators do not need to apply all the skills because there is already a trust between both parties. The most important skills are active listening and verbal communication. In this phase the project management of the company has to negotiate the schedules, cost and their scope but it is much easier because they mutually know how they work from last jobs.

But it may be the case that the subcontract company/service is not known. Then the negotiators would be like in the first phase but changing the perspective, because the company would not bid they will choose the best bid. They need all their skills.

In both cases it must negotiate the risks and responsibilities of each party. Although they know each other, risks and responsibilities are not the same in all projects.
Phase 3

The project / product has been delivered thus seems no longer have anything to negotiate. It depends on the type of contract initially done because maybe they have been specified conditions’ involving a renegotiation or maybe when the contract ends the client is interested in renewing.

If the customer wants to renew the contract is because the efforts between parties to maintain a good relationship has succeed. In this case the most important skills are active listening, verbal communication and creative because after one time had been working together they might know how to improve the process or the product. But if they have to renegotiate some aspects because there is a special condition negotiators have to use all their weapons.

2.5.2. Conclusion

After this quick opinion of which skills negotiator may need in each part of a negotiation we can conclude that all the skills are important, but more important is know when they should use them. There are some skills that I do not mention as: ethics and teamwork. It is not because they are useless, it is because they are general skills that everybody must have.

I could do this personal view because of the knowledge acquired doing my internship in Barcelona I the company OCA where I could see how a real company works. Moreover, by reading multiple articles about the negotiation and of course thanks to the book “Project business” by Karlos Artto, Miia Martinsuo, and Jaakko Kujala

Consequently, the game has to simulate a real situation of the first phase, so it’s the one where the students could practice and acquire all the skills that a negotiator need.

2.6. How do students learn and get motivate through simulation games

An educational simulation game is the vehicle through which users gain some knowledge from their interactions with the game. It consists of a set of activities with objectives that the students have to do and get it (Carro, Breda, Castillo, & Bajuelos, 2002). The main aim of this thesis is design a simulation game in order to train practical negotiation skills to the students and the use of them support the strategy of learning by doing which is always more effective than learning by telling (Siewiorek,
Educational games mix both, the motivation to catch user’s attention and the learning objectives.

Before designing a game it is essential to know how the students learn and get motivated through simulation games. To define it, this chapter is based in the Experimental Learning Theory (ELT) which defines learning as the process whereby knowledge is created through the transformation and assimilation of experience, i.e. the process of learning has two phases: conceptualization and experimentation (Kolb, Boyatzis, & Mainemelis, 2001). As explained, a simulation game allows the students to use the knowledge learned in traditional classroom, therefore ELT is directly related to “Learning by doing”.

According to Miettinen (2000) in *The concept of experiential learning and John Dewey’s theory of reflective thought and action*, Vol. 19, Num. 1 Kolb design the model of ELT which is also well known as *Lewinian model of Action Research and Laboratory Training* which is represented with four stages (Figure 6).

![Figure 6: Lewinian model.](image-url)
Basically, these steps represent the process of how students acquire knowledge through experience: First, they do or have an experience. Second, they reflect on the experience. Third, they conclude which concepts have learned through the experience. Finally, they test the new skills that they have achieved.

Although we know how people learn through simulating games, it doesn’t mean that the students are going to reach the objective with any game because it exists one important fact: Motivation. In order to learn, students must be motivated because if not, they are going to feel empathy, inactivity, passivity and also find learning difficulties. So “what motivate them?” The interaction and the emotions that a game generates what are an important fact in the learning process (González & Blanco, 2008). First, the exchange of information between people with different levels of knowledge causes a change in the forms of individuals that make them learn and the situation of confrontation with others maintain them motivated in order to be the champion (Pindado, 2005). Second the fact that a student is characterized in a fictional world with fictional role identity generates a series of emotions that makes the player completely involve in the game. Finally, if the game does not have enough attractive and motivation in order to promote the educational purposes that it has, it exists different reinforcement which must be positive and immediately after the quick feedback (Etxeberría, 2001).

For instance, one reinforcement of an educational game is when it has progressive levels of difficulty which requires gradual mastery of the lowers levels go through them, and each level make the students be in a new challenge; in this way the players have a goal or goals which represent a personal growth and make him/her stay motivated (Flores, Rosas, López, Nussbaum, & Correa, 2000; Pindado, 2005).

According to González & Blanco (2008) in order to maintain the students motivated they must be 100% emotionally involved with the game and it has to exist interaction with other students. From my perspective as a student, which motivates to play a game is being able to compete against your friends or colleagues and the fact of win them generates in you the feelings of confident and satisfaction. Competitive is one of the pillars of our society present in all levels and all areas in the business, sports, family, etc.


2.7. Design of educational games

Designing a funny, educational and motivational simulation game it looks not really difficult. But, for real it is considered as a challenge either the game is a role play, case study or digital game. In order to design one, it is necessary to consider that educational games are divided in two dimensions: educational dimension and game elements (Echeverría et al., 2011). So designers must understand them.

2.7.1. Educational dimension

Educational dimension is separate in two components; the first one is a specification of the learning objectives. The second aims at determining how the game is going to be integrated at class. It is very important define the educational goals because if there are not well specified it is going to be hard to design an effectively educational game because the students are not going to learn all the concepts.

According to Aleven et al., 2010 in Toward a framework for the analysis and design of educational games specifying the learning objectives require answering three questions:

“What knowledge or skills do student/players need to have before starting the game?”

“What knowledge or skills can student/players reasonably be expected to learn from the game?”

“What knowledge and skills might they learn that go beyond what they actually encountered in the game?”

When the game designer has understood what the objectives that the game must accomplish are, he will be in a better position to create an effective and fun game that motivates students or players in order to be integrated as class. As we can see, the second objective depends on the first one.

2.7.2. Game elements

Game elements define the main elements in the design of a game, what is known under the acronym of MDA. This framework (MDA) formalizes the consumption of games by breaking them into their distinct components and establishing their design counterparts.
Components and Counterparts of the MDA framework (Aleven et al., 2010; Echeverría et al., 2011; Hunicke, Leblanc, & Zubek, 2004)

<table>
<thead>
<tr>
<th>Components</th>
<th>Counterparts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rules</td>
<td>Mechanics (M)</td>
</tr>
<tr>
<td>System</td>
<td>Dynamics (D)</td>
</tr>
<tr>
<td>Fun</td>
<td>Aesthetics (A)</td>
</tr>
</tbody>
</table>

**Mechanics:**

It describes its procedures and rules. Moreover, it defines the particular components of the game and control options available for the players. Therefore, this game element is directly affected by the learning objectives. The rules of a game should be simple to attract the students.

**Dynamics:**

It describes the sequence of events during the game. There also are the behavioral that results when applying the game’s mechanics

**Aesthetics:**

Describes the emotional responses when the players/students interact with the game system and their subjective ideas. The designer must answer this question: “What makes a game fun?”

This MDA approach has two perspectives, so you can think about it from the designer perspective or from the player perspective. On the one hand, from the designer perspective the rules and procedures (M) give rise to the sequence of events (D) and in the end it turns lead to the aesthetics experiences. On the other hand, the player perspective starts with the aesthetics emotions, which is born the dynamics of the game and then they get the mechanics of the game.

That’s why when you are working with games, if you want to create the best game it is helpful to think about player perspective (Hunicke et al., 2004).

![Figure 7: perspective of designer and player](image-url)
In figure 7 it is possible to see that the aesthetics counterpart catch the subjective experience of the player, in this case of the student. When the designer is thinking about the aesthetics he wants to know what makes a game fun, but for designing the game it is necessary to move towards a more directed vocabulary. Accordingly for this framework, it has been listed the following game characteristics of the aesthetics elements which help the designers to describe the game (Aleven et al., 2010; Hunicke et al., 2004):

<table>
<thead>
<tr>
<th>Sensation</th>
<th>Game as sense-pleasure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fantasy</td>
<td>Game as make-believe</td>
</tr>
<tr>
<td>Narrative</td>
<td>Game as drama</td>
</tr>
<tr>
<td>Challenge</td>
<td>Game as obstacle course</td>
</tr>
<tr>
<td>Fellowship</td>
<td>Game as social framework</td>
</tr>
<tr>
<td>Discovery</td>
<td>Game as uncharged territory</td>
</tr>
<tr>
<td>Expression</td>
<td>Game as self-discovery</td>
</tr>
<tr>
<td>Submission</td>
<td>Game as pastime</td>
</tr>
</tbody>
</table>

*Table 3: Game characteristics or taxonomy of the aesthetics elements*

When a game is designed and tried, it is important to ask the players to discuss about the game in order to now if they reach the objectives of the game.

### 2.8. Types of games for teaching

To create and design a game for teaching, it is important to know which options we have in order to choose the best one for teaching negotiation in business project and which one is the best method for the students get the skills to negotiate.

Nowadays, we can find three types of teaching aids: role play, case study and simulation games (Blank, 1985). Here is a short description of these three options in order to choose the best one for reach the purpose of this thesis.

**Role play**

It is the one which requires physical involvement on part of the students; each participant is given a role and scenario. It is the most used in classroom and this method is recognized as more suitable to increase the trainees’ skills (Pacios Álvarez, Vargas Funes, et al., 2011). According to Howard Raiffa (2002) “Negotiation Analysis” pg.270:
“Numerous simulated negotiations are conducted in classroom and academic laboratories using role playing exercises”.

For instance, there is one research done in Madrid (in the UPM) where the students are asked to play with their classmates assuming a role in an adapted engineering negotiation. The experiment takes three days and the results were that one out of three groups that didn’t reach an agreement the first day, they achieve it the third day. Also they observed that the students with no special good negotiation skills at the beginning of the experiment have even reached better final results that those ones with natural negotiation skills (Pacios Álvarez, Ortiz Marcos, Cobo Benita, & Vargas Funes, 2011). Consequently, they verify that learning approach tested was valuable and more productive than only lecture-oriented approaches.

This teaching aid is giving students better understanding of decision-making environment. Students are exposed to a particular situation.

**Case studies**

In this type of exercises the teacher has to give the student real cases to study in group. So they can analyses each case with the entire group and in the end the team has to work together to reach an agreement and submit a single written report (Blank, 1985). Sometimes it is difficult for students to understand the nature of the environment being described in a case due to all the technical information, etc.

By this method, each student has to interact with others and it is a good to see different ways to think, because in a real world your work group it is not going to be always the same. People must know how to be tolerant, interact and how answer in front of any situation because there are not specific answers to specific problems.

Case studies is a good way to become familiar with analysis and decision making, with the process of arriving at answers rather than with answers themselves

**Simulation games / Videogames**

Computerized simulation games combine the contents of case studies and role playing exercises (Blank, 1985). With the new technologies, this type of games is more famous.

There are different categories within the gaming world and each one allows the player to develop certain skills. On the one hand RPGs, platforms, arcade and action games help to develop reflexes and motor aspects, such as "Zelda" and "Super Mario Bros". On the other hand the games based on strategy and simulation are relate to
intellectual development, such as "The Age of Empires" and "Civilization". According to Pindado (2005) *Las posibilidades educativas de los videojuegos. Una revisión de los estudios más significativos*, the use of the latest for educational purposes has been advocated by many authors whom consider that this type of games will be great learning tools.

One of the qualities of video games is to immerse the player (Flores et al., 2000), i.e. the players are progressively increasing their attention and concentration on their goals. Thus, the experience in a video game becomes a natural emotional experience as that occurring in the real world (González & Blanco, 2008). So when a game is designed, it is essential to take advantage of this immersion effect and introduce it in educational contents (Rosas et al., 2003). But actually, the problem is that this immersion effect is understood as something addicted and only for amusement (Flores et al., 2000), so it is important to start to change people mind and start to take advantages of this games which are really useful to catch students attention, motivate them, memory exercising, problems solution and develop creativity (Pindado, 2005).

In the end, computer games are really attractive for the students so they provide fantasy, competitiveness, a clear goal, high speed, independence from physical laws, holding power and adequate level of complexity which help the players to develop some skills. Although they are not welcome in general, nowadays are currently changing their image in a positive way. In fact, the number of educational videogames is increasing but the designers are focusing more in children and also topics for amusement, mental agility and learning languages, for instance “Brain training” of Nintendo DS.

### 2.8.1. Conclusion

To sum up, game learning is a teaching strategy in order to motivate and immerse the students in the class; but designing a new game for educational purpose it is not as simple as it looks. The designers have to bear in mind not only their perspectives, also the perspectives of the players so in that case they might know what the players are looking for in a game so they must know who their students are.

In order to design and represent an educational game the main factors are: First, defining the educational and knowledge objectives that the players may reach. Second, define the activities and rules that the users may follow in order to reach the objectives. Finally, if there is any activity which depends on other it is necessary to define the dependence relationship between activities.
Finally, it is necessary to choose which type of game is the one who is better to represent a real negotiation case, and the conclusion is the play role. Not only is the best option to learn new skills, it is also the best one representing the skills that a negotiator may have. Case study is not the best way to teach all the skills because it is good for teamwork and analyze different way of thinking but not for simulate a real negotiation because there is not decision making. Videogames is not a bad option because they have really good qualities that motivates and make the students get immerse, but there are negotiation skills which cannot be learned from a computer game; for instance the ability to read body language.
3. The simulation game

This chapter presents the empirical section where is going to be defined the simulation game with all its character, the negotiation situation and all the game elements.

The chosen topic for this game is the purchase of a house. We have chosen this topic because it is something that does not need any technical knowledge or vocabulary, as well as being something that, in general, everybody wants to do in their future.

3.1. Description of the different characters

During the simulation game, each student is going to have a role play in order to represent a real situation of negotiation. Following it is defined each character, with their current situation, interests and resources.

**Buyer 1**

*Character:* you are 35 years old and you want to move into a new house because you are thinking about start a family.

*Current situation:* you are with your partner living in your own flat and you have to move to the new house at least on September 2014 because you have rented the apartment. Until September you do not have losses of money because you are not paying rent due to the fact that you have your own property.

*Interests:* you’re looking forward for a house/apartment at least with three bedrooms, two bathrooms, dining room and one parking. If it is possible you want a garden and swimming pool. Regarding the location, you prefer a house far from the city center because you are considering having children and you want them to grow up in an environment without stress and less contamination.

**Buyer 2**

*Character:* You are a 28 years old. You have achieved a new and better job so you want to move to a better flat because you are gaining more money than ever and you want to rise up your standard of living.

*Current situation:* You are in a rented apartment, far from the city center and the contract rent ends on July.
Interests: you are looking for a flat or house with a big bedroom, one bathroom, a big salon and dining room because your leisure life is really active. If it is possible you would like an American bar as a kitchen and also a parking. Luxury furniture and luxury staff has a big value for you. About the location, you are looking to move close to the city center.

**Contractor 1**

**Character:** you're a working for a real-estate agency that does not build houses but you sell them. You have ten years of experience in the business and have never received any complaints from any client.

**Current situation:** the company is going through an economic slump and need to sell houses / flats as quick as possible. If you get the next sale you will be promoted. You're lucky to have a good relationship with the contractor 3.

**Interests:** sell as many houses as you can to save the company.

**Resources:** stock of old and new build houses or apartment for sale. The majority of them well situated in city center or close. Good reputation as one of the companies on charge of the best apartments in city center. Good relationship with contractor 3.

**Contractor 2**

**Character:** you are the manager of a construction company which was set up 20 years ago. You have been working in this position during almost all your professional life, so you are used to manage the issues with the clients and also with the labors. Due to your experience, you have many trusted contacts.

**Current situation:** the business is booming and has a great reputation in complete projects on time. The company has very good contacts with companies for buying lands as the contractor 4. They have been working many times together so there is an arrangement between them which consists on: if the building company finds a customer for a land, contractor 4 is going to give contractor 2 the 15 % price of selling the land and vice versa.

**Interests:** try two capture new clients for building new houses, apartments, etc. and also attract the clients interested in buy a land in order to work with the contractor 4 and rise up their gains. Maintain reputation.
Resources: good relationship with contractor 4, they have enough resources for build houses but do not have the resources for swimming pool, gardens and luxuries. In order to build a house he/she needs to buy the land at least one month before of the delivery.

**Contractor 3**

Character: you are the owner of your little construction company. You set up the company 5 years ago so you don't really have a reputation.

Current situation: the company has enough work to stay in the market, but they need to create a good reputation and start to attract new clients in order to make the company bigger.

Interests: make a good and well-known reputation to make the company grow up.

Resources: they have resources for building private houses with all the luxuries that the clients want: luxury furniture, swimming pool, beautiful garden and own lands. Also you have a good relationship with contractor 1.

**Contractor 4**

Character: you are 40 years old and you also are the owner of many lands that you inherit from your father.

Current situation: you are living in city center in a fancy house but a few months ago you have lost your job, so now you are looking for new opportunities to maintain your standard of living.

Interests: make profit of the land that your father left to you and maintain the way of living.

Resources: good relationship with contractor 2 who is giving him future opportunities in the world of constructing. Due to all the land that you have, you know good gardeners to maintain the lands.
**Contractor 5**

*Character:* you are marketing and sales manager of a company who sells luxury furniture and luxury staff for the house.

*Current situation:* the company is in a good season, they have a good reputation with the big company because they have decorated luxuries and famous hotels. They are famous for work with hotels and decorate big office buildings.

*Interests:* expand their service in the little houses in order to improve their reputation on this area and make more specific works.

*Resources:* they have all luxury staff and swimming pools.

*Figure 8: Relationships between contractors and their resources*
3.2. Description of the negotiation

This game is designed for students of the department of industrial engineering and management from the University of Oulu whom can apply their knowledge about project negotiation and acquire new skills through its commissioning. Therefore, the aim of the game can be defined as: know a bargaining environment from which students can acquire new skills and knowledge to assess the situation and get the best solution.

As is stated above, the game pretend to simulate a real situation of a negotiation. From the characters already described, it follows that the bargaining game is based on the purchase of a house so the different parties are buyers and contractors. Although it looks like there are only two parties, this business situation is much complicated that it looks because the characters have been created with the purpose that they do not have all the resources. So in the meantime of the principal negotiation, the contractors should negotiate with others in order to subcontract and reach buyer’s expectations.

With the intention of make the game as realistic as possible, we have defined all possible issues to negotiate and their value for each character. Now, depending on the knowledge of the players we can choose how to play:

- Easy: each student knows the value of all the characters and the possible resolution.
- Medium: each student knows their values and the value of other two characters and the possible resolution.
- Hard: each student only knew their value and the possible resolution.

The different levels have been created in order to see if the students can notice the different of difficulty and also realize if they are improving or not. Furthermore, in the appendix there is a model of the proposal that the buyers have to give to the contractors. There are some gaps up to the players in order to don’t be a monotone game and for the students be creative.

Following in table 4 and table 5 are presented all the monetary values for each character where the red numbers represent costs and the black numbers are profits.
<table>
<thead>
<tr>
<th>Issue</th>
<th>Buyer 1 Value</th>
<th>Buyer 2 Value</th>
<th>Contractor 1 Value</th>
<th>Contractor 2 Value</th>
<th>Contractor 3 Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price House</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>375.000 €</td>
<td>-50.000 €</td>
<td>-50.000 €</td>
<td>62.500 €</td>
<td>62.500 €</td>
<td>50.000 €</td>
</tr>
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<td>352.500 €</td>
<td>-27.500 €</td>
<td>-27.500 €</td>
<td>40.000 €</td>
<td>40.000 €</td>
<td>27.500 €</td>
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<td>340.000 €</td>
<td>-15.000 €</td>
<td>-15.000 €</td>
<td>27.500 €</td>
<td>27.500 €</td>
<td>15.000 €</td>
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<td>312.500 €</td>
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<td>0 €</td>
<td>-12.500 €</td>
</tr>
<tr>
<td>300.000 €</td>
<td>25.000 €</td>
<td>25.000 €</td>
<td>-12.500 €</td>
<td>-12.500 €</td>
<td>-25.000 €</td>
</tr>
<tr>
<td>280.000 €</td>
<td>45.000 €</td>
<td>45.000 €</td>
<td>-32.500 €</td>
<td>-32.500 €</td>
<td>-45.000 €</td>
</tr>
<tr>
<td>Schedule</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>June</td>
<td>0 €</td>
<td>0 €</td>
<td>-250 €</td>
<td>-4.000 €</td>
<td>-5.000 €</td>
</tr>
<tr>
<td>July</td>
<td>0 €</td>
<td>0 €</td>
<td>-500 €</td>
<td>-2.000 €</td>
<td>-3.500 €</td>
</tr>
<tr>
<td>August</td>
<td>0 €</td>
<td>-1.000 €</td>
<td>-1.000 €</td>
<td>0 €</td>
<td>-2.000 €</td>
</tr>
<tr>
<td>September</td>
<td>-1.000 €</td>
<td>-2.000 €</td>
<td>-1.500 €</td>
<td>2.000 €</td>
<td>0 €</td>
</tr>
<tr>
<td>October</td>
<td>-2.250 €</td>
<td>-3.000 €</td>
<td>-3.000 €</td>
<td>4.000 €</td>
<td>1.500 €</td>
</tr>
<tr>
<td>November</td>
<td>-3.500 €</td>
<td>-4.000 €</td>
<td>-4.500 €</td>
<td>6.000 €</td>
<td>3.000 €</td>
</tr>
<tr>
<td>Location (Far city center)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 km</td>
<td>-10.000 €</td>
<td>4.000 €</td>
<td>-7.000 €</td>
<td>-10.000 €</td>
<td>-9.000 €</td>
</tr>
<tr>
<td>3 km</td>
<td>-7.500 €</td>
<td>2.000 €</td>
<td>-5.000 €</td>
<td>-8.000 €</td>
<td>-7.000 €</td>
</tr>
<tr>
<td>6 km</td>
<td>-5.000 €</td>
<td>1.500 €</td>
<td>-3.500 €</td>
<td>-7.000 €</td>
<td>-5.500 €</td>
</tr>
<tr>
<td>10 km</td>
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<td>0 €</td>
<td>-2.000 €</td>
<td>-6.000 €</td>
<td>-4.500 €</td>
</tr>
<tr>
<td>15 km</td>
<td>1.500 €</td>
<td>-5.000 €</td>
<td>0 €</td>
<td>-5.000 €</td>
<td>-3.000 €</td>
</tr>
<tr>
<td>20 km</td>
<td>-1.000 €</td>
<td>-7.500 €</td>
<td>2.000 €</td>
<td>-4.000 €</td>
<td>-2.500 €</td>
</tr>
<tr>
<td>30 km</td>
<td>-2.500 €</td>
<td>-9.000 €</td>
<td>3.000 €</td>
<td>0 €</td>
<td>0 €</td>
</tr>
<tr>
<td>Scope of contract</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard</td>
<td>0 €</td>
<td>0 €</td>
<td>0 €</td>
<td>0 €</td>
<td>0 €</td>
</tr>
<tr>
<td>Parking for 1 car</td>
<td>500 €</td>
<td>500 €</td>
<td>-800 €</td>
<td>-600 €</td>
<td>-600 €</td>
</tr>
<tr>
<td>Parking for 2 car</td>
<td>800 €</td>
<td>750 €</td>
<td>-1.000 €</td>
<td>-900 €</td>
<td>-900 €</td>
</tr>
<tr>
<td>Garden</td>
<td>3.000 €</td>
<td>+/-1.000 €</td>
<td>-</td>
<td>-</td>
<td>-2.000 €</td>
</tr>
<tr>
<td>Swimming pool</td>
<td>7.000 €</td>
<td>+/-4.000 €</td>
<td>-</td>
<td>-</td>
<td>-2.000 €</td>
</tr>
<tr>
<td>Luxuries</td>
<td>8.000 €</td>
<td>4.000 €</td>
<td>-</td>
<td>-</td>
<td>-3.000 €</td>
</tr>
<tr>
<td>New from &lt; 2 years ago</td>
<td>-</td>
<td>3.000 €</td>
<td>1.000 €</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2 years &lt; New from &lt; 5 years ago</td>
<td>-</td>
<td>-2.500 €</td>
<td>3.000 €</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>New from &gt; 5 years ago</td>
<td>-</td>
<td>-5.000 €</td>
<td>5.500 €</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 4: Monetary values for buyers and contractors 1, 2 and 3
### Table 5: Monetary values for contractors 4 and 5

<table>
<thead>
<tr>
<th>Issue</th>
<th>Contractor 4 Value</th>
<th>Contractor 5 Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.000 €</td>
<td>5.000 €</td>
<td>5.000 €</td>
</tr>
<tr>
<td>6.000 €</td>
<td>4.000 €</td>
<td>4.000 €</td>
</tr>
<tr>
<td>5.000 €</td>
<td>3.000 €</td>
<td>3.000 €</td>
</tr>
<tr>
<td>4.000 €</td>
<td>2.000 €</td>
<td>2.000 €</td>
</tr>
<tr>
<td>3.000 €</td>
<td>1.000 €</td>
<td>1.000 €</td>
</tr>
<tr>
<td>2.000 €</td>
<td>0 €</td>
<td>0 €</td>
</tr>
<tr>
<td>Schedule</td>
<td></td>
<td></td>
</tr>
<tr>
<td>June</td>
<td>-500 €</td>
<td>-2.500 €</td>
</tr>
<tr>
<td>July</td>
<td>-1.000 €</td>
<td>-2.000 €</td>
</tr>
<tr>
<td>August</td>
<td>-2.000 €</td>
<td>-1.500 €</td>
</tr>
<tr>
<td>September</td>
<td>-3.000 €</td>
<td>-1.000 €</td>
</tr>
<tr>
<td>October</td>
<td>-4.000 €</td>
<td>-500 €</td>
</tr>
<tr>
<td>November</td>
<td>-5.000 €</td>
<td>-250 €</td>
</tr>
<tr>
<td>Scope of contract</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Garden</td>
<td>-2.000 €</td>
<td></td>
</tr>
<tr>
<td>Swimming pool</td>
<td>-</td>
<td>-2.000 €</td>
</tr>
</tbody>
</table>

3.3. **Objective, rules and basis of the game**

As it is mentioned in the point “Design of educational games” every game must have its objectives and rules. It is necessary to specify the learning objectives of the game and then define the rules of the game.

The learning objectives of a project negotiation simulation game are basically three. First, acquire and improve the skills that a negotiator must need. Secondly, make the students feel that they are in a real situation. Finally, make them to feel more confident and be prepared for their futures negotiations in the world of business project.

As previously mentioned every game has its own rules (mechanics). Although negotiation is defined as a game in which the rules are not constant (game theory), it is necessary to specify a set of standards that students must comply while the simulation is performed:

- Each role is for one person, is not a group negotiation.
- Each player needs one paper and pen.
- Respect speech interactions of the others players.
- It is a win-win negotiation.
- It takes 30 min for one game.

Now it is defined one example of the dynamics of this game (figure 9). It is a dynamic orientation because it depends on the level of the players and the teacher, but is the one followed in this thesis.

**Step 1:** First, try to calculate the BATNA and ZOPA of your role, according to given values. Each student will analyze the situation.

**Step 2:** the bidding process start. On the one hand, “buyer 1” will give their proposal to “contractor 2” and “contractor 3”. On the other hand, “buyer 2” will give their proposal “contractor 1”.

**Step 3:** the contractors will analyze the proposal and they will check if they will need to subcontract in order to reach buyer’s expectative. The negotiations to subcontract are show in figure 9, they must finish with a contract.

**Step 4:** when the sub-contractations are done, “buyer 2” and “contractor 1” are going to have a face to face negotiation. Otherwise, “buyer 1” is going to choose between “contractor 2 and 3”, maybe they request bids and then they will end with a face to face negotiation. Finally an agreement is or is not going to be making based on these final face to face negotiation.

Then all the players might explain to the ones who didn’t get an arrangement why they didn’t accept it.
Figure 9: Dynamics of the game
3.4. How is going to be tested?

To test this simulation game, the researcher has chosen random university students to play it and then make them answer the game session of the appendix. This game session has some predefined questions which help how to improve the game and maybe gives a new approach for a future research.

To test the game and make it more dynamic the researcher has designed cards for each character and therefore for each player (Appendix). These cards have two faces: the first reports on the characteristics of the character of the game, and the second shows the values of each issue per character. Thus, if you should or want to show the values to the other player you only have to face up the second face. On the contrary, if you do not want the other player to see your values, you will show the first face. Furthermore, to attract the attention of students and create a fun and motivating atmosphere the cards have been designed in different colors, besides improving the aesthetic game level (Aleven et al., 2010; Echeverría et al., 2011).

In addition, the resources of each contractor are represented by one letter and in one color in order to help the players to remember what resources it has. The idea of represent each with one color is to make it easy to the student because then, instead of asking many times, he/she is going to associate the letter and the color to one resource (Figure 10). There is a special card which shows the meaning of each letter (Appendix).

![Figure 10: Symbols of the resources](image)

Once everything explained, let’s try the game in the easy level. First of all each student has to take one of the seven cards. Secondly, the researcher is going to explain them how the role play works and give them the pre-questions test (Appendix). Then the game starts. The students must follow the orientation dynamic created (figure 9). Finally, when it ends they have to answer the post-question test (Appendix).
4. Analysis of the results

In this section the results of the empirical research are presented and divided into three sets of discussion. Firstly, a broad contextual analysis of one of the game tests is discussed and then preceded by the dynamics designed (Figure 9). Secondly, an analysis is done based on questions that the students had to answer before and after they played the game. Finally, through an extensive interpretation of the results, an improved game is suggested.

4.1. Example of game test

Figure 9 signifies that there are two main negotiations taking place at the same time, one for each buyer. Firstly the dynamics of the negotiations are explained in accordance with buyer 1. Thus the players are: B1, C2, C3, C4 and C5. The subsequent section explains the dynamics of the negotiations for buyer 2, in which the players are: B2, C1, C3 and C5.

All game sessions were organized arranging an appointment with a group of exchange students. Basically, everything was organized by whatsaap or facebook. The meetings had been done in a flat of yliopistokatu 16 either in the university in one of the rooms of the department of Industrial Engineering and Management or cafeteria. All the testing arrangement has been done with a good atmosphere, some coffee, etc. so nobody was forced to do it, it was like any other plan for relax and have fun. This fact it is important, because people was not under pressure and that is the best atmosphere to learn.

Moreover, in order to complete my research, the researcher made “facetime” or “skype” with my friends from Spain and family explaining the game and how it works. After these virtual sessions they answer my questions.

Testing the results of the game helped me to identify some potential mistakes as well as propose possible future improvements. By changing the monetary values of each player within the game made the game more realistic and presented the opportunity for everybody to win.
4.1.1. Dynamics with Buyer 1

Once all the characters cards were distributed, the individual researcher explained the game to the respective players. This was followed by the answering of the pre-questions from the respective players as seen in (Appendix). The players then analyzed their role within the game and asked me the researcher of any doubts they potentially had (Step 1). Essentially majority of the doubts were about the values. For instance:

Contractor 4 and 5: “Why all my schedule values are a cost?”
Answer: It is because if C4 does not sell the lands he has to pay the maintenance of it. On the other hand, C5 has the schedule values as a cost and in a decreasing way is because a quick job needs more labor so the employees will have to work overtime that has to be paid.

Buyer 1: “Why for me a house close to city center is a cost and for buyer 2 is a gain when usually has a house close to city center is more expensive? Buyer 2 values are wrong?”
Answer: No they are not wrong, the values of the location it does not depend on the price of the area. It depends on the interest of each character, i.e. what they want is a gain and what they don’t want is a cost.

After answering all the questions, the game started with the B1 proposal (Step 2):

![Figure 11: Buyer's Proposal](image)

[Step 3] starts; contractor 2 evaluates her role within the game and then asserts that she needs to subcontract someone for the swimming pool and for the garden. In addition, she also realizes that she needs to purchase a land to contractor 4 to build the house. Thus the negotiation between C2 and C4 begins. Contractor 2 also enquires
whether she may purchase the land before September and what C4 is going to offer for the garden. At the beginning of negotiations, C4 attempts to sell the garden for 5.000 € and the land for 5.000 € in June. As time progresses, C2 tries to negotiate 4.000 € for the garden and 6.000 for the land. After some deliberation, C4 accepts the offer because she believes that she has the same gains. In the end, the contract is negotiated for **10.000 € with the land in June**.

Now C2 has to negotiate with C5 for the swimming pool. To start proceedings, C2 says that she needs the swimming pool for June, but then C5 responds and says that she may only obtain the swimming pool in October for 5.000 €. Following this, C2 attempts to negotiate the schedule but the only way to have the delivery before (**August**) is by accepting an offer of **8.000 € including swimming pool and luxuries**. In addition C2 said that is going to consider both options and try to convince the buyer to take the luxuries.

Step 4 starts; contractor 3 negotiates with the buyer, she analyzes the situation and then presents an offer to B1 which includes obtaining the house in September with a garden and a swimming pool; in order to save more money she also attempts to convince B1 to live 30 km far from the city center. But buyer 1 does not want to live that far, therefore C3 prepares the next bid: the house with two parking lots and situated 15 km from the city center for 338.000 €, the garden for 3.000 € and the swimming pool for 4.000 €. Therefore in the end **everything with the delivery in September for: 345.000 €**. Buyer one told her that she needs time to think about it and then she goes to see the offer of the contractor 2.

Contractor 2 proposes one initial bid offer to the B1, by saying that the house is going to be ready by September, and is 15 km from the city center, with a beautiful garden, swimming pool and luxuries for 345.000 €. They then begin to deliberate about the luxuries because seemingly B1 does not want luxuries. But then C2 starts to propose some the luxuries which shall include the swimming pool and the garden in order to try to convince the buyers mind. Finally C2 convince B1 to take the luxuries. After, B1 responds C3 asking for luxuries; C3 says that she can offer 348.000 € for all and with the delivery on August.

**Final decision: contractor 2 sells the house for 345.000 € on September**

<table>
<thead>
<tr>
<th>Negotiation Resume</th>
<th>B1</th>
<th>C2</th>
<th>C4</th>
<th>C5</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL WIN</td>
<td>-200 €</td>
<td>10.600 €</td>
<td>5.500 €</td>
<td>1.500 €</td>
</tr>
</tbody>
</table>

*Table 6: Monetary results of each player*
When the game has finished, I’ve asked some questions about their decision and some players explained what they have done in other position. The questions and comments make during this game session:

- Why did C2 answer the bid of C4 with the same amount but changing the price of both issues?

  “Because we have an arrangement that for each land that I bough, I’m going to gain the 15% of the price of the land. Consequently, with this arrangement I’m gaining more.”

- Why did C5 offer the luxuries for 3.000 (so she was not gaining anything for them) and losing money doing the delivery earlier?

  “Because my character is interested in achieve a good reputation and start working in these types of projects.”

- Why did B1 change your mind about the luxuries?

  “Because I saw that for my character has a lot of monetary value and also C2 convince me”

- Why did B1 choose C2 to build your house?

  “The way that she talks is giving me more confidence and she explains to me that for the garden, luxuries and swimming pool she needs to subcontract people so if a choose her I’m giving work to more people.”

- Comment C5: “If I’ve been C3 I will remark that I’m my own supplier for everything, for the house, land, luxuries, garden and swimming pool. What it means, that the risks of failing with the deliver or whatever are less. Therefore provides greater security and more confident.”

4.1.2. Dynamics of Buyer 2

Following the same process as buyer 1. Some of the doubts were:

Contractor 3: “Why if the delivery is earlier I have more costs?”
Answer: Because a quick job needs more labor so the employees will have to work overtime that has to be paid.

Contractor 3: “The garden, swimming pool and luxuries depends on the location?”
Answer: *No the location in the card only refers when you are selling the house* (To make it more clearly I put in the car “Location House”).

Contractor 1: “Why my schedule is in red numbers?”
Answer: *Because it cost you the maintenance of the houses I you don’t sell them.*

After answering all the questions, the game starts with the B2 proposal (Step 2):

![Buyer's Proposal](image)

**Figure 12: Buyers 2 proposal of one of the game sessions**

Step 3 starts; C1 initially starts by deviating negotiations with the other contractors for things because she doesn’t have the initial resources, so she tells the buyer what date she would prefer to have the house and how also mentions what she is willing to spend on it, and whether or not there is any delivery margin. Buyer 2’s selling price is initially under her expected budget but C1 could give the house up for offer by August or September, but this unfortunately has a negative opportunity cost for the buyer.

The sub-contractors then begin to enter the negotiation proceedings; First C1 negotiates with C5 for the luxuries and they agree upon two options depending on the delivery. If it is in August the price is 5.500 €, and if the delivery is in September 4.000 €.

After that conversation, C1 starts to initiate the negotiation with C3 who presents an offer to her for the value of 8.500 €, and includes all the luxuries plus a garden in September. C1 responds to the offer by requesting that she wants to know the individual cost of each thing, because it may possibly be cheaper to sub-contract the luxuries with C5, and thus the individual costs amount to the value of 4.000 € for the garden and 4.500 € for luxuries in September. C1 proceeds be renegotiating with C5 based upon the argument that with one sub-contractor, she is going to feel more
confident because the difference in individual price is not high. C5 responds by trying to persuade her by using his current good reputation and to stay with the same price. Finally, C1 subcontracts contractor 3 for all the work in September for the value of 8.500 €.

Step 4 starts; Now it’s a face to face negotiation where C1 gives her final bid: One new house situated relatively near the city center for the duration of more than 5 years, with 2 parking lots for 330.000 € in September, an in addition with a garden and luxuries for 10.000 €. So the total amount is 340.000 €. Towards the end of negotiations they eventually mutually agree upon a contract for 325.000 € whereby an existing house was built 4 years ago and with one parking.

<table>
<thead>
<tr>
<th>Negotiation Resume</th>
</tr>
</thead>
<tbody>
<tr>
<td>B2</td>
</tr>
<tr>
<td>TOTAL WIN</td>
</tr>
</tbody>
</table>

*Table 7: Monetary results of each player*

The questions and comments make during this game session:

- **Comment B1:** *if I was C1 I would try to convince me (B1) to change the location of the house.*

- **Comment C3:** *if I was C1, I would try to negotiate the parking.*

- **Question C5:** *Why do you think you do not make a contract?*

  “Because I make a cheap offer for the starting so i couldn’t change in the renegotiation. In addition, I didn’t have the ability to persuade C1.”

After playing, all the players answer the post-questions of the game session.

### 4.2. Results

Generally all the students that attempted the game are studying technical degrees, some of which are worth mentioning such as engineering and architecture. Therefore they have all learnt valuable insight into the basics of negotiations and as well as economics. This also means everyone has the necessary skills to understand the game and be able to resolve various situations by identifying all the odds and possibly considering several potential options. However it should be dually noted that not everyone thought they had the skills to be a good negotiator.
As previously mentioned, one of the main objectives of creating this game was to motivate the students to learn while playing an interesting game simultaneously. Before the game was introduced and the students began to play, I the researcher tried to ask the student what would motivate them to play with an educational game, and if their first impression was according to their thoughts. So the questions that I have done are:

1. What did you like to find in an educational game?
2. What is your first impression of the game? It motivates you?

Answering question number one, in general what all the student are looking in an educational game is to spend a good and funny time interacting with your classmates while you are learning something new in an easy way. Some of the answers were:

“Understand easily the basis and enjoy interacting with the others while you learn some negotiation skills at the same time”

“Easy to follow and interactive”

“It has to be interactive and also you have to learn something while you are applying already know concepts”

“Easy to follow, interactive and competitive”

“To get some experience for the future negotiations”

In reference to the second question, the players perceive a good first impression. It is important to notice that this question was developed before they began playing and thus resembles a good start, but it doesn’t mean it is going to work. The majority answer say that it is an interesting and easy game; the fact of be a winner makes the game more attractive and some of them wrote that the topic is useful.

“Games are always a good way to learn, this seems easy and useful in our current situation and yes it motivates me”

“It is an interesting game to get familiar with the house market and to develop your negotiation skills”

“It looks easy and dynamic. I want try to see if it really works because negotiations skills is something that I need and there’s no way to learn than practicing, so if it works is such a good idea”

“It is a good game to understand the basics of the real-estate market, it’s interesting but it does not really motivate me”
“Interesting, it can be transferred to life, entertaining. For the first time it’s little bit complicated but after all instructions it’s clear”

For closing and not least, the players answer the post-questions (Appendix) that pretend to reveal the feelings while they were playing and if the game affects the learning outcomes. Moreover, some questions are related to the next point in order to improve the game.

3. Did you feel that the simulation gave a realistic illustration of real negotiation? If not, what do you think that the game needs to be more realistic?

In general people perceive a realistic situation because they find problems no easy to go through it. Moreover, this troubles are sneaky to solve because do not always have the same answer so the game is also challenging.

“It shows you all the problems and tricks when you are negotiating and how confusing could it be”

“It provided a good challenge that gave no easy solution”

But on the contrary, not everyone is positive so some people believe the opposite in some aspects such as:

“It is more or less realistic. Is not perfect because you are not playing with your real properties and money, then your behavior is not like in the reality. For solve it, maybe the game needs more economic and construction laws according to the reality”

“The game looks funny and realistic because of the situation but my feelings and my behavior is not real, I don’t think there is a way to create this feeling. Maybe with a reward for the winner people will feel more pressure”

“The game is close to reality, you can get basics of negotiating but for sure it’s only a game, the behavior of sellers and buyers would be different during real negotiations”

Finally, the question totally related with one of the questions research:

4. Do you feel that you are better negotiator?

“Yes, witnessing other contractor’s situations has given me a stronger idea of how difficult it can be to pick a contractor”
“It has been interesting but I am not sure if I could do the same in real life. In addition, I’ve never done negotiation lectures so I think I’m lack of knowledge”

“Not better not worse, I tried to balance the amount of money I will earn taking in account the person I am working with, actually I think that that’s what companies should do”

“I don’t think that I’m a better negotiator but I realize that while you are negotiating you need to bear in mind a lot of things. But I only play one time, I believe that with a continue training and feedback I will improve my skills. So this game is a good way to train your negotiation skills for the future”

“No, but if I play tennis one day it doesn’t mean that I’m going to be better. It is the continue training what make you better so it might be a good idea to vary the topics of negotiation”

Analyzing all the answers after trying the game and put the players on the role of all the characters, they don’t feel that they are better negotiators. But most agree that the repetition of this game with different people would be such a train for bargaining skills. Moreover, some of them say that the topic is a good idea but if you have to play a lot of times could be boring and repetitive.

4.3. Improved design of the simulation game

One of the post-questions of the game is: How would you improve the game? In that point I am trying to use the effort invested in this test from the people who played, adapting some of the ideas that they gave to me.

First overview of all the answer is add some restrictions to the characters and add some fake money as in monopoly with the purpose of make it more realistic. Some of the answers:

“Maybe the contractors could have only a specific number of properties or workers available so they cannot attend several customers at the same time. In the case more buyers should be included”

“More restrictions and better explanation of what price would be good to charge”
“Maybe some paper fake money can make it more realistic because you see what you are really earning”

“Create some cards for each character that give to them a realistic limitation like: you can’t sell the land on Before August because there is a plague of moles”

“I agree with the issue that maybe some more restrictions should be given but I think the game doesn’t need more realism to be improved, the most important is that each player analyses his and others movements during the process to understand strengths and weaknesses in a negotiation”

Consequently, to improve the game and make it more challenging I’ve created some cards for the contractors. Before the game stars, each contractor has to take one card i.e. one restriction which is going to be private.

Figure 13: Restriction cards

Figure 13 shows both sides of the restriction cards. The symbol # is actually the number that corresponds to the contractor. There are going to be as many cards as the following restrictions:

<table>
<thead>
<tr>
<th>Contractors</th>
<th>Restrictions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>You only have flats and houses between 0-3 km from the city center</td>
</tr>
<tr>
<td>1</td>
<td>You are run out of houses new from 2 years ago</td>
</tr>
<tr>
<td>2</td>
<td>You have to deliver before August because your provider is on a strike after this month.</td>
</tr>
<tr>
<td>2</td>
<td>Your budget for sub contractions (land, swimming pool, garden and luxuries) is 15.000 €</td>
</tr>
<tr>
<td>3</td>
<td>Your can’t sell a house at 15 km from the city center because your lands have a plague of moles</td>
</tr>
<tr>
<td>3</td>
<td>You have to deliver the house on June</td>
</tr>
<tr>
<td>4</td>
<td>You can’t sell a land on June</td>
</tr>
<tr>
<td>4</td>
<td>Your Price land value has changed and your 0 is in 3.000 € because you want to buy a new car</td>
</tr>
<tr>
<td>----</td>
<td>------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>5</td>
<td>June and July are peak season for swimming pool so you rise your price to make the swimming pool to at least 3.000 €</td>
</tr>
<tr>
<td>5</td>
<td>You have to deliver the luxuries on June</td>
</tr>
</tbody>
</table>

| **Table 8: Example of restrictions for each contractor** |

I do not create restrictions cards for the buyers because the character created has their own restrictions. So it would be repetitive and illogical make this cards. Besides the cards, to make people feel more the money that they are losing or winning it’s a good idea play with fake money or poker chips.

To conclude, the game is going to follow the same rules plus the one of the restrictions cards and of course it is possible to add more restrictions cards. Moreover, it is a good idea that at the end of the game each character has to sum up which of its goals has reached and analyze why he/she has achieved them or not. Afterwards, they must explain to the others players and they must feedback as well.

### 4.4. Market Test

After trying the game with random studies and arrive at the conclusion that the game motivates the students and in general they’ve enjoy and like learning with it. One of the key characteristics of the constructive approach it is the fact of realizing the “market test” which is a first level practical test of the designed construction in order to demonstrate its practical usefulness. It is the moment when the researcher tries to sell the idea to the target organization in order to carry out the construction in fact (Lukka, 2003). But in this case the market test done it’s what we know as “weak market test” because the game was tested by professional and then, they are going to tested in several courses of the university (Kasanen, Lukka, & Siitonen., 1993). So after all the knowledge gathered, in order to be applied the construction designed, this one has to pass this market test.

In this research the “market test” has been done by professors and some students from the department of industrial engineering and management of the University of Oulu, whom have all the skills and enough knowledge to represent a real, deep and intense negotiation. We can say that the “market test” is the final test carried on by professionals in the art of project negotiation.
Once tested the game, players expressed their views. First, the numbers of rooms, bathrooms that appear in the buyer proposal that students must complete create confusion in the game because it doesn’t appear in the monetary values of each player. So it would be more practical remove these options of the buyer proposal. Also it would be good to add to this new proposal the budget that the buyer has (Appendix 2). Second, in order to the students have more defined objectives the experts proposed that each player should have a profit goal. One possible way is that each one of the players' card has a note in the interest referring that you have to reach at least "X" benefits. Third, they suggested that contractors whom do not have all the resources such as C5 could do special offers which have to be specified in the card of the player. For example:

Swimming pool: -2.000 €
Luxuries: - 2.000 €
Swimming pool + Luxuries: -3.000 €

To be exact the contractor who does not have all the resources has the advantage that combining both resources the monetary cost decrease. The aim of this idea is create a more competitive negotiation between players against contractor 3, which is the one with all the resources. Finally, another change to make is to add restrictions to buyers. As in the enhanced game we add the restriction cards for contractors, it should be a good idea make the same thing for buyers. Therefore possible examples would be:

- You don’t want a swimming pool.
- You only need one parking.
- You are not keen on luxuries.
- During the negotiation, if the contractor asks you must give up with one issue.

In addition, besides of highlighting aspects to change the game, they also said that in the explanation of the game is important to stress that the players can renegotiate. Moreover, even as students advance in the subject, a possible way to make the game more attractive and challenging would be playing without a dynamic to follow and also making possible to do business between contractors.

By the way, at the end of the market test the expert’s professors ask how the teachers are going to mark the students. And according to many researchers as Barsalau (1999), Brown, Collins & Duguid (1989) and Glenberg & Robertson (1999) the students must have and instantaneous or quick feedback because it is much difficult for the people to remember or understand information given out of context or before people need it (González & Blanco, 2008). Consequently the teacher must follow the negotiation.
5. Discussion

In this section the empirical findings are discussed and argued while reflecting the finding to the relevant theory described in the literature review. This part is divided into two subtitles. First, it is discussed the creation of the game and how the games motivate students; here questions research 1, 2 and 3 are answered. Second, is going to be discussed the learning outcomes of the game in relation to all the literature review gathered of project negotiation; where the last two question research are answered.

5.1. Creation of a game and how it motivates the students

Thanks to the results obtained when testing the game, it has been found that most participants found the game engaging and motivating. According to the theory explained in the literature review, when you create a game you have to understand and define perfectly what the goals of the game are, how the game will be introduced to the students and finally all the elements that define it. According to the words of Echeverría et al., (2011): the educational dimension and the game elements.

The theory gained says that an educational game must have defined objectives, rules and procedures to be followed by the players, i.e. the mechanics and dynamic elements. Also, when a game is created the designers should also take into account the aesthetics, to be precise the elements that the game needs to be funny. All this together is what is known as framework MDA (Aleven et al., 2010; Echeverría et al., 2011; Hunicke et al., 2004). According to the theory, the rules of the game should be simple to attract players, which agree with the results due to most of the players said it was simple and easy to follow.

For designing the characters and the game the researcher thought which aesthetics characteristics was the game going to have to be fun. The designer was looking for fantasy, challenge and sensation. But, once designed and tested the characteristics showed are: Sensation, fantasy, challenge, fellowship and expression (Aleven et al., 2010; Hunicke et al., 2004). Fantasy, because the players have to play a new character with defined interests and current situation. Expression is related to self-discovery, after trying the game the students didn’t feel that they had improved their qualities, but they felt a realistic game where you could find out where they had failed and which skills they had and which ones they don’t. Sensation is referring to the pleasure that the players feels while they’re playing; while they were playing the researcher could see that in general the players were feeling comfortable and happy to be there.
In the end the game designed shows more aesthetics characteristics than the researcher thought, which is a good thing because these new aesthetics are positive.

Finally, the intention was to design the dynamics of the game from the point of view of a student. The researcher as a student thought necessary that the dynamics designed (Figure 9) should have comic elements and be very schematic, in order to be funny, simple and easy to understand and follow. For this reason the house shown is from the comic series “The Simpsons”, although this is not necessary to create a game. According to the literature review the dynamic is one of the essential components to design the game (Aleven et al., 2010; Echeverría et al., 2011; Hunicke et al., 2004). But after performing the “market test” with experienced negotiators, they concluded that it would be interesting to play without following a dynamic; thus making the game more real and complicated. So in this case you could say that the theory does not match the practice in this regard.

Then the answer of the following research question is given:

- Which type of games motivates students?
- How games motivate students?

As it is mentioned above, the good educational games are those that have well defined the learning objectives and easy rules. But it is also important to bear in mind that the goals to reach this learning objectives must be challenging but achievable which is fundamental to maintain the player motivated (González & Blanco, 2008). Moreover, it is also mentioned in the literature review the reinforcements for the educational games make the game more attractive and motivating (Flores et al., 2000; Pindado, 2005); and that’s why the game was designed with different levels of difficulty. Furthermore, another fact that motivate students is the exchange of information between people with different levels of knowledge and the situation of confrontation; i.e. competitive games (Pindado, 2005). According to this information and results obtained the game is competitive and challenging, but in particular the results of the market test explain that the game it is not enough challenging in some aspects. Consequently, they add the exposed ideas in the point “4.4.Market Test” to make it more challenging and competitive.

It is deductible that the aesthetics of the game are directly related to the motivation, so when simulations games presents a fictional but real situation which allows players to be a fictional character in a fictional situation which in a near future could be real motivates them to play, it is the fantasy of the game.

Finally, a good game has the ability to produce the effect of immersion in which students are more concentrate and sometimes they forget that they are in class, so for them is like leisure time. Making this effect the computerize games are the star (Flores
et al., 2000). Some of the students who tested the game mentioned this idea, and the researcher as a student and fan of videogames agree with them about computerizes the game.

To sum up, answering both questions the games that motivate students are those which completely make you feel away from traditional classes and also become a boring and monotonous class in a dynamic and funny one. The competitive games that can show when it comes to the application of concepts you can be better than one with best marks. Challenging games where the player can advance through different levels and improve and those games where the player never get bored because he/she is immerse in the game.

5.2. **Learning outcomes related to learning objectives**

The designer of an educational game has to understand the objectives that the game must accomplish in order to define the appropriate learning objectives. Moreover, depending on the learning objectives and the expected learning outcomes it is essential to choose the right type of game for teaching: role playing, case studied and videogames (Blank, 1985).

In this case, the learning objectives of a project negotiation simulation game are basically the following. First, acquire and improve the skills that a negotiator must need. Secondly, make the students feel that they are in a real situation. Finally, make them to feel more confident and be prepared for their futures negotiations in the world of business project. According to the information gathered in the literature review, for these learning objectives the best type of game is the role playing.

After testing the game the majority of the players do not feel better negotiators. But they have the feeling of being in a real situation and they also have discovered that the art of negotiation is not that easy as a book show. Because in real life, not everybody act and think in the same way. There are a lot of uncontrollable variables which are not the same in all the negotiations. Some of the players said that it could be a good improvement mix a role play with a computerize game in order to be more funny and motivating.

To sum up, the students didn’t achieve all the learning objectives because they didn’t feel an improvement on their skills. But what they could realize was which skills they are lack, so for the next time they should focus on this area and improve it. Moreover, lot of them affirms that with the repetition of this game with different people would be a good training for bargaining skills.
In the game there are the main learning objectives, the ones defined above. But as all the games, this one has hide learning objectives related to project negotiation. Because while the students are playing, they apply their knowledge about the theory of project negotiation gathered in normal classes, learning to identify all the elements of the NAA, learn how to calculate BATNAs, ZOPA and achieve the skills in order to change the game during the negotiation and arrive to the best solution. So with educational games the students could realize what they really know and notice the difference between theory and practice. Furthermore, the students could comprehend that during the negotiation they have to think about all the negotiation elements explained in the literature review studied by many authors such as: MIT Open Course Ware, 2011; Murtoaro, Kujala, & Artto, 2005; Murtoaro & Kujala, 2007; Raiffa, Richardson, & Metcalfe, 2002; Sebenius, 1992 and more researchers.

About the type of game choose, the researcher agree that role playing is the most suitable to increase the trainees’ skills (Pacios Álvarez, Vargas Funes, et al., 2011). But after the results, the combination of role playing and videogames could be an improvement for the educational games.
6. Conclusion

Based on the conclusions extracted from the previous chapters, a conclusion about the game designed will be given and also the answer of the research questions. Then, a critical evaluation of the research is done. Finally, potential future studies will be suggested.

6.1. Key conclusions

Before exposing the conclusion it is important to define what a construction research is:

“The constructive research approach is a research procedure for producing innovative constructions, intended to solve problems faced in the real world and, by that means, to make a contribution to the theory of the discipline in which it is applied” (Lukka, 2003)

This research it has been done to make a contribution to the theory of project negotiation. In order to help the professors to teach negotiation and help the students to face their future negotiation in this globalized business world by training their bargaining skills with a simulation game. But in the end, it also helps to understand how the students get motivate and the big contribution that the “Learning by doing” can provide. With the learning by doing all the difficulties look softer because the student acts do not have any impact in real life, so the students can try it more than once until they acquire all the knowledge. According to EdTechReview (ETR) Editorial Team, 2013:

“Gaming provides instant gratification, a feeling of accomplishment and a sense of approval that youngsters desire of”

In conclusion, according to the results the created game pass the market test besides seemed fairly realistic due to you can negotiate different issues and you can also appreciate how difficult it can be a negotiation. The game in general motivates the students and after observing the game session the researcher could say that it generates some immersions in the players despite the game designed need some changes and it could be improved.

It is believed that the game designed can be an important contribution to higher education because it could be applied in other subjects besides the negotiation or could even combine more subjects where you can practice negotiation and also
acquire specific vocabulary. Therefore, students would be practicing the art of bargaining and acquiring vocabulary by repetition.

6.2. Critical evaluation of the research

The main condition of validity a constructive research it is observed if it solves the problem in question. To verify the results, evidence must be presented from the literature review gathered and the empirical section (Lukka, 2003).

The research was planned to start from the basis about the use of games with educational purposes, continue with all the theory of project negotiation, how to design an educational game and finally go on with the creation of the game and its implementation. Basically, in this research the method used for validating the results was the market test. Before the market test, the game created was tried with random students which help to answer some of the question research but it doesn’t confirm the game as a solution for the teaching problems in this area.

The usability was tested through implementation of the solution with the aim of getting an overall idea of the successfulness of the constructed solution. This took place during the market test. The results of this validation were majority positive except some details that the experts may change but it doesn’t affect to the results. But according to the answers of the students this game presents some limitations because it could be boring and repetitive in the long term. One other limitation in this research was the non possibility of trying the game in a real classroom atmosphere with the teachers giving the feedback to the students.

Consequently, although the game was validated it will be necessary try it in the adequate atmosphere. Moreover, to solve the main problem during more than a while of why this constructive research has been done, it is necessary to bear in mind both results; following there is a potential future research.

6.3. Potential Future research

After the conclusion of all the work collected, created and analyzed; a potential future research that can come through this master thesis is create a new type of educational game which mix the role play with computerize games. Although previously the researcher have said that video games would not be the best way to teach negotiation, we must note the strong effect it has on students today. In fact, during the analysis of the results, some of the students answer the following:
“The game could be more interesting if you can play in a long period like in an online game and playing when you can from your house buying, selling and making reforms and trying to learn more and more negotiating with different people every day”

“It will be interesting to put the game into an internet based system. The players put the offers and the buyer decides and goes through the next round”

Accordingly to the students, computerize the game is also one of the ideas to improve it. Therefore, instead of being a set of 20 -30 min it is a good idea create a long period role game similar to the existing one "The SIMS ", in which each student could create his fictional character and they could communicate through the game. Then the game will indicate which negotiations should be made by the avatar in the game, and which ones should be done in class in a real way. In this manner, the game would have all the attractive properties of video games and also the students could practice and acquire all the skills that a good negotiator needs. Furthermore, in this virtual game each contractor could design their manufactures and also they could do a render of the future house in order to convince the buyer during the negotiation. They could even plan future upgrades making the game longer and more interactive. In this way, students also could develop more creativity.

According to González & Blanco (2008) in Emociones con videojuegos: incrementando la emoción para el aprendizaje, p. 78:

“The emotional aspects of RPGs get large importance and even more if there are video games in first / third person because they have the potential to induce almost any possible emotion to the players. Moreover, within RPGs in first / third person and direct manipulation of them, a strong sense of immersion is produced when the player identifies with the avatar. This identification makes social interactions between avatars perceived as interactions between real people”

If the game was successful, it could be possible generate an online game with other universities in which the players could set up their companies, develop and advance in the game. They also could lose and break the company; it would be like a virtual but real life simulation where the students need to negotiate online in order to advance in the game and make their business rise. A game like this could be helpful to learn international negotiation and how people from other countries think and act.

The mix of computer games and role plays in an educational game it looks as a potential future research.
References


Fischer, R., Ury, W., & Patton, B. (1981). Getting to Yes Negotiating an Agreement without Giving In (traduction française, 1982: Comment réussir une négociation). In Ed. le Seuil (pp. 1–7).


Appendix

Buyer’s Proposal:

1. Type of house: Flat / House

2. Close to city center:

3. Number of rooms:

4. Bathrooms:

5. Luxuries:

6. Garden:

7. Swimming pool:

8. Parking:

_The gaps are up for the player, so be creative and ask all what you would like in your future house._
**Game sessions:**

**Pre-test for all participants**

1. What are you studying? or What did you study?

2. Which skills for negotiation do you think that you already have?

3. What did you like to find in an educational game?

4. What is your first impression of the game?

5. It motivates you to play?

**Post-test for all participants**

6. Did you feel that the simulation gave a realistic illustration of real negotiation?

7. If not, what do you think that the game needs to be more realistic?

8. Do you feel that you are better negotiator?

9. How would you improve the game?
Cards for each player:

**BUYER 1**

*Interests:*
- Create a family.
- Far from city center.
- At least: 3 rooms, 2 bathrooms, dining room and parking.
- Optional: swimming pool, garden and luxuries.

*Current Situation:*
- Own property.
- Is rented on September.

<table>
<thead>
<tr>
<th>Price</th>
<th>Schedule</th>
<th>Location House</th>
</tr>
</thead>
<tbody>
<tr>
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<td>352.500 €</td>
<td>July 0 €</td>
<td>3 km -7.500 €</td>
</tr>
<tr>
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<td>280.000 €</td>
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<td>30 km -2.500 €</td>
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<tr>
<th>Scope</th>
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<tbody>
<tr>
<td>Standard 0 €</td>
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<tr>
<td>Parking for 2 car 800 €</td>
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<tr>
<td>Garden 3.000 €</td>
</tr>
<tr>
<td>Swimming pool 7.000 €</td>
</tr>
<tr>
<td>Luxuries 8.000 €</td>
</tr>
</tbody>
</table>
BUYER 2

Interests:

- Rise your standard living.
- Close to city center.
- At least: one bedroom, one bath and one big salon/dining room.
- Optional: swimming pool, garden (value is +/- depending of the player).
- Luxuries are important for you.

Current Situation:

- New and better job.
- You are in a rented apartment, the contract ends on July.

<table>
<thead>
<tr>
<th>Price</th>
<th>Schedule</th>
<th>Location House</th>
</tr>
</thead>
<tbody>
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<td>280.000 €</td>
<td>September</td>
<td>0 €</td>
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| Scope                     | Price   
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<tbody>
<tr>
<td>Standard</td>
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<td>Swimming pool +/-</td>
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</tr>
<tr>
<td>Luxuries</td>
<td>4.000 €</td>
</tr>
</tbody>
</table>
CONTRACTOR 1

**Job:** you are an agent of a real state agency with 10 years of experience.

**Interests:**
- Sell as many houses as you can.

**Current Situation:**
- You have houses and flats in stock.
- The company is into an economic slump.
- Good relationship with C3.
- Good reputation for best apartments in city center.

**Resources:** New and old houses and flats.

<table>
<thead>
<tr>
<th>Price House</th>
<th>Schedule</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
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<td>June</td>
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<td>20 km</td>
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<tr>
<td>280.000 €</td>
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<td>30 km</td>
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</tbody>
</table>

| Parking for 1 car | -800 € |
| Parking for 2 car | -1.000 € |
| Standard          | 0 €    |
| New from < 2 years ago | 1.000 € |
| 2 years < New from < 5 years | 4.000 € |
| New from > 5 years ago  | 7.000 € |
CONTRACTOR 2

**Job:** Manager of a construction company which was set up 20 years ago. Experience of all your life.

**Interests:**
- Capture new clients and maintain their good reputation.
- Better clients without land to build in order to work with C4

**Current Situation:**
- Business boom
- Good relationship with C4, they have an arrangement 15% gains.
- Good reputations in delivery.

**Resources:** everything to build a house but no garden, land and swimming pool. You need to buy the land at least one month before the delivery.

<table>
<thead>
<tr>
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<th>Schedule</th>
<th>Location</th>
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<tr>
<td>280.000 €</td>
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</thead>
<tbody>
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<td>Standard</td>
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<tr>
<td>Parking for 1 car</td>
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<tr>
<td>Parking for 2 car</td>
<td>-900 €</td>
</tr>
</tbody>
</table>
**CONTRACTOR 3**

*Job:* Owner of your little construction company which was set up 5 years ago.

*Interests:*
- Capture new clients and build a good reputation.
- Grow up the company.

*Current Situation:*
- Enough clients to survive.
- Good relationship with C1

*Resources:* Build a house, garden, swimming pool, lands and luxuries.

<table>
<thead>
<tr>
<th>Price House</th>
<th></th>
<th>Schedule</th>
<th>Location House</th>
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</thead>
<tbody>
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*Scope*
- Standard 0 €
- Parking for 1 car -600 €
- Parking for 2 car -900 €
- Garden -2.000 €
- Swimming pool -2.000 €
- Luxuries -3.000 €
CONTRACTOR 4

You are the owner of inherit lands.

**Interests:**
- Sell and make profit of your inherit lands.
- Maintain your standard living.

**Current Situation:**
- Living in the city center in a fancy house.
- 5 months ago you lost your job.
- Good relationship with C2.
- If you sell a land to C2 you have to give him/her 15% price.

**Resources:** contacts for garden

<table>
<thead>
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<tr>
<td>6.000 €</td>
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<tr>
<td>2.000 €</td>
<td>November -5.000 €</td>
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<td>0 €</td>
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</tbody>
</table>

**Scope**
- Garden -2.000 €
CONTRACTOR 5

**Job:** marketing and sales manager of a luxury company.

**Interests:**
- Expand their services in normal house and apartments.
- Improve the reputation of the company.

**Current Situation:**
- Good season for the company.
- Famous for decorate hotels and in general big public buildings.
- Good relationship with C4.

**Resources:** luxury staff and swimming pool.

<table>
<thead>
<tr>
<th>Price Luxuries</th>
<th>Schedule L+S</th>
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<tbody>
<tr>
<td>7.000 €</td>
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<tr>
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<td>July -2.000 €</td>
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<td>October -500 €</td>
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<tr>
<td>2.000 €</td>
<td>November -250 €</td>
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<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Swimming pool</td>
<td>-2.000 €</td>
</tr>
</tbody>
</table>
B = constructor
NB = no constructor
S = swimming pool
G = garden
L = luxuries
T = land
Appendix 2

Improved Buyer’s Proposal:

1. Type of house: Flat / House

2. Budget:

3. Close to city center:

4. Luxuries:

5. Garden:

6. Swimming pool:

7. Parking: