

谈判: Mega-games as Catalysts for Deep Experiential Learning in Higher Education

Aline Castillo Moreno and Mario Alberto Caudillo Melgoza

Tecnologico de Monterrey, Estado de Mexico, Mexico

acastillo@tec.mx

mcaudillo@tec.mx

Abstract: The study deepens into the transformative potential of mega-games as an innovative educational tool, offering profound and enriching learning experiences across diverse educational landscapes. Mega-games represent a fusion of various elements, including role-play, social interaction, simulations, rule-based systems, economic dynamics, political scenarios, and decision-making processes, all woven into an immersive narrative fabric. Through experiential learning, these games provide a unique platform for students to engage deeply with complex subject matter. This research centres on the application of mega-games within the context of sixth-semester students pursuing a degree in International Business at the Mexico State Campus of Tecnológico de Monterrey. Specifically, the study focuses on the simulation exercise titled 谈判 Tánpàn, which aims to immerse students in negotiation scenarios regarding the final price of a digital device manufactured in China. Drawing upon foundational principles outlined in Jesse Schell's book on game design, the exercise is meticulously designed to emulate real-world negotiation dynamics. The integration of game design principles, coupled with positive student feedback, underscores the efficacy of mega-games as potent educational instruments. Through rigorous analysis, the study unveils the profound impact of experiential learning on students' comprehension and application of negotiation techniques. By simulating authentic real-world scenarios, students are empowered to develop critical problem-solving acumen, hone their analytical thinking prowess, and refine their decision-making aptitude. Moreover, the immersive nature of mega-games fosters a dynamic learning environment that transcends traditional pedagogical approaches, fostering a holistic understanding of intricate subject matter. The success of the 谈判 Tánpàn simulation exercise serves as a testament to the potential of mega-games to revolutionize educational paradigms. It signals a burgeoning opportunity to expand the horizons of mega-games across various academic disciplines and participant cohorts. This study advocates for the widespread integration of mega-games as educational resources within Higher Education, championing their capacity to engender profound learning experiences and cultivate essential skills, heralding a new era of dynamic, immersive, and effective educational methodologies in diverse educational settings.

Keywords: Higher Education, Educational Innovation, Professional Education, Experiential Learning, Mega-Games, Negotiation Techniques.

1. Introduction

This study focuses on the design and implementation of a mega-game conducted with students from the International Business program, aiming to provide a transformative educational experience and overcome the limitations of traditional teaching methods. In this context, the goal was to offer students a clear understanding of complex concepts, especially at a crucial point in their career where they are beginning to enter the business world and require a solid knowledge of these concepts and their practical application in a formal environment.

The exercise, titled 谈判 Tánpàn (which translates to "negotiation" in Chinese), was specifically named to be easily pronounceable in various languages, making it both accessible and engaging for a global audience. This choice was intentional to ensure that the name resonated well with participants from different linguistic backgrounds, aligning with the exercise's goal of facilitating cross-cultural negotiation scenarios.

The exercise was carried out through the implementation of a mega-game specifically designed for this class, with the collaboration of the course instructor and a game creation expert. Twenty-one students participated, organized into seven teams of three members each, with specific roles assigned to each team member. The main objective of the mega-game was to negotiate the final price of a digital device (assumed to be a mobile phone) manufactured in China for the United States market.

The design of this mega-game was based on principles proposed by Jesse Schell in his book "The Art of Game Design: A Book of Lenses" (2019), focusing on an experiential learning approach. During the game, students had the opportunity to apply negotiation techniques and make strategic decisions in a simulated context, leading to a deeper and more practical understanding of the concepts addressed.

In this context, this study seeks to analyze the impact and results obtained from the implementation of this mega-game in the educational process of International Business students, highlighting its ability to provide

meaningful learning experiences and enhance the development of key skills in a dynamic and participatory learning environment.

2. Context

In the context of International Business studies in higher education (HE), it is paramount for students to learn practical and experiential negotiation skills in a language other than their mother tongue. This necessity arises from the widespread use of different languages in international negotiations, where effective communication can significantly impact the outcome of business transactions. The mega-game presented in this study is founded on the premise of financial mindset: "You don't get what you deserve, you get what you negotiate."

Understanding and mastering negotiation techniques in a foreign language not only enhances students' language proficiency but also equips them with essential skills for navigating diverse cultural and linguistic landscapes in the global business arena. In international business settings, negotiations often require individuals to communicate, bargain, and reach agreements in languages other than their native language, making proficiency in these languages a strategic asset.

Moreover, the mega-game served as a crucial component of the students' final assessment, blending experiential learning with practical application as a learning activity. By immersing students in simulated negotiation scenarios, the game provided a platform for them to practice and refine their negotiation skills, applying theoretical knowledge to real-world situations. This approach not only reinforced classroom learning but also instilled confidence and competence in navigating complex negotiation dynamics.

2.1 Traditional Teaching Methods and Mega-games

In traditional teaching methods, topics related to negotiation such as bargaining power, negotiation strategies and tactics, ethical dilemmas, strategic alliances, intercultural communication, cultural mapping, conflict management strategies and tactics, negotiator profiles, negotiation dilemmas, negotiation strategy, planning, and pricing (anchor, reservation, minimum, maximum, walk-away prices) are typically taught through theoretical lectures, and case studies. While these methods provide a theoretical understanding of negotiation concepts, they often fall short in delivering immersive and practical learning experiences that mirror real-world negotiation scenarios.

The problem addressed in this research revolves around the effectiveness of traditional teaching methods in conveying complex concepts to students about international negotiation within the context of the International Business program. Researchers aimed to overcome the limitations of traditional teaching by implementing a mega-game as a learning activity. The objective was to provide students with a hands-on experience and a deeper understanding of negotiation techniques through immersive and experiential learning.

Mega-games represent a novel and evolving concept in the world of gaming, combining elements from traditional board games, role-playing games, and simulations to create large-scale, immersive experiences. Unlike typical board games or simulations, mega-games involve a significantly larger number of participants, often ranging from 20 to over 100 players, each taking on unique roles within a complex, interactive environment.

At their core, mega-games are multi-faceted events where players engage in collaborative and competitive activities, usually over several hours. These games are designed to simulate complex scenarios, such as geopolitical conflicts, economic systems, or historical events. Each player or group of players is assigned a specific role with distinct objectives, powers, and resources, contributing to an overarching narrative that evolves based on collective and individual actions.

Like board games, mega-games utilize structured rules and objectives, providing a clear framework within which players operate. Both formats often involve strategic thinking, resource management, and decision-making. However, while board games typically accommodate two to ten players around a table, mega-games scale up dramatically, encompassing many more participants in a much larger space, sometimes even utilizing multiple rooms or areas.

Mega-games share similarities with simulations in that they both aim to replicate real-world scenarios and systems. Both formats involve participants taking on roles and making decisions based on their understanding of the scenario. However, simulations often prioritize accuracy and educational outcomes, closely mirroring real-world processes and outcomes. Mega-games, on the other hand, blend realism with gameplay elements to

ensure a dynamic and engaging experience. While educational goals can still be a focus, the emphasis on player interaction and narrative development sets mega-games apart.

What sets mega-games apart from other gaming formats is their scale and complexity. The involvement of dozens to hundreds of players introduces a level of unpredictability and interactivity that smaller games cannot achieve. The roles in mega-games are often asymmetrical, meaning different players have different levels of power, information, and objectives, creating a rich tapestry of interactions and negotiations.

Additionally, mega-games are highly adaptable and can be tailored to fit various themes and scenarios, from historical battles to futuristic political landscapes. This flexibility allows for a wide range of creative and educational applications, making them suitable for diverse audiences, including educational institutions, corporate training sessions, and enthusiast gaming communities.

Mega-games represent a unique and engaging form of entertainment that bridges the gap between board games, simulations, and large-scale interactive experiences. By combining elements of strategy, role-playing, and real-world simulation, they offer a robust platform for exploring complex scenarios in an immersive and collaborative environment. Understanding and appreciating the distinct qualities of mega-games can enhance their application and enjoyment, providing participants with a rich, memorable gaming experience.

2.2 Mega-games in HE

Mega-games represent a unique approach to learning within HE, blending elements from role-playing games, tabletop games, and war games into immersive simulations. These large-scale simulations typically involve 20 to 300 participants in a single session lasting several hours, where players assume specific roles with tailored missions. The participants engage in cooperative and competitive interactions to achieve their objectives.

Educationally, several mega-games have been developed with educational purposes in mind. For instance, Darren Green and Liz Cable (Wells, S., 2019) created a mega-game centered around the climate crisis and simulated negotiations between countries regarding carbon footprint reduction. Although this activity was not mandatory for a specific subject, it yielded valuable insights for both participants and organizers from diverse perspectives.

This article is grounded in the financial mindset premise: "You don't get what you deserve, you get what you negotiate." The exercise was integrated into students' final grades as a learning activity. Mega-games trace their origins back to war games played since the 1970s, with the mega-game format conceived by designers Passy Griffith and Jim Wallman (Iparraguirre, A., 2022).

Tánpàn's game design allows students to engage with various aspects of international business, including market analysis, strategic planning, and decision-making under pressure. Utilizing the lenses from Jesse Schell's "The Art of Game Design: A Book of Lenses" (2019), the game's effectiveness is significantly enhanced.

The lens of curiosity drives players to explore the complex international business scenarios presented in Tánpàn, encouraging them to uncover various negotiation strategies and outcomes. This curiosity is closely linked with problem-solving, as players are required to address intricate problems related to market analysis and strategic planning, thus honing their critical thinking skills.

Games that offer intrinsic value provide players with satisfaction beyond external rewards, and Tánpàn achieves this by delivering educational value that intrinsically motivates students. By engaging with realistic business challenges, students see direct applications of their efforts, which further fuels their motivation. The introduction of novelty through new scenarios and challenges ensures that the game remains fresh and engaging, preventing monotony and promoting continuous learning.

Secrets within the game simulate real-world uncertainties, compelling players to think more strategically and explore deeper into the game's mechanics. Goals are clearly defined for each session, giving players a sense of direction and purpose, crucial for maintaining engagement. Well-defined rules create a structured environment where students can apply their knowledge and strategies without ambiguity, while competition drives students to perform better, fostering a healthy competitive spirit that mirrors real-world business environments.

Cooperation is also emphasized, as players must work together to achieve common goals, reflecting the collaborative nature of international business. Effective reward systems provide positive reinforcement, encouraging students to apply themselves and recognize the value of their contributions. Constructive feedback

and penalties for poor decisions, as part of punishment, help students understand the consequences of their actions, promoting better decision-making skills.

The elegance of Tánpàn's design lies in its simplicity and depth, avoiding unnecessary complexity while providing a rich learning experience. Balance is maintained to ensure that all players, regardless of skill level, can engage meaningfully with the game, fostering an inclusive learning environment.

By incorporating these lenses, Tánpàn not only enhances students' understanding of international business but also provides an immersive and effective educational experience as a Mega-game (Schell, 2019).

Mega-games serve as more than just entertainment; they serve as effective educational tools. Examples of their application in HE include ALLIANCE, a political science simulation mega-game by Shawn Mcmillan (2015), and the game "VIRUS: Bunny Apocalypse" by Ted Castronova, both played in the United States. Additionally, Linköping University conducted a Climate Change mega-game in 2020 as part of an ongoing research project, engaging players in real-life experiences and role-play to stimulate discussions around the topic.

Despite limited research on mega-games in Mexico, previous exploration of gamification in various studies, particularly conference proceedings, has laid the groundwork for innovative learning experiences. National creations such as Robledo-Rella's (et al., 2017) Cocogame and González & Montalvo's (2018) BluRabbits internet-based platform have also contributed to diverse learning experiences among Tecnológico de Monterrey's undergraduate students.

A mega-game implemented into our educational context, was created by Martínez (et al., 2023) and documented in the study titled "Kuxtal: Student Motivation Through Mega-games in HE Design Students," presents a significant opportunity. This implementation, carried out at Tecnológico de Monterrey, yielded positive results, showcasing the potential of mega-games as engaging and effective tools for addressing complex challenges. By incorporating educational innovations that enhance student motivation and involvement, mega-games such as Kuxtal foster collaboration, critical and creative thinking, and practical actions among students, impacting their immediate academic contexts and fields of study. This successful case serves as an encouraging call to educators aiming to develop immersive learning experiences and innovative teaching methods that empower students to think critically, learn actively, and take meaningful actions. Additionally, the paper advocates for further exploration of mega-game design and integration in HE environments, particularly in programs that emphasize collaborative problem-solving and research participation.

Mega-games, characterized by their large-scale, interactive, and multi-faceted nature, have been increasingly recognized for their educational value in higher education. These games facilitate active learning by immersing students in complex scenarios that require strategic thinking, collaboration, and problem-solving.

谈判 Tánpàn was selected for this study because of its potential to simulate real-world negotiation scenarios within a controlled educational setting. The game's design allows students to engage with various aspects of international business, including market analysis, strategic planning, and decision-making under pressure.

2.3 INCOTERMS Meaning

"The INCOTERMS® are a set of eleven individual rules issued by the International Chamber of Commerce (ICC) which define the responsibilities of sellers and buyers for the sale of goods in international

3. Methodology

The experiential learning exercise, 谈判 Tánpàn, was implemented with a focus on providing students with practical experience in international trade negotiations. The game's structure is designed to mimic real-world trading conditions, requiring participants to navigate the complexities of market demand, cost management, and strategic alliances.

This research employed a qualitative approach, utilizing a semi-structured group interview as the data collection instrument with all students. The researchers conducted a mega-game simulation titled "谈判 Tánpàn" with a group of 21 students divided into seven teams of three members each. Each team member assumed a specific role: the manufacturer, the exporter, and the seller. The objective of the mega-game was to negotiate the final price of a digital device manufactured in China for the United States market.

Before the negotiation session, teams were given time to organize and decide their roles in the negotiation. Subsequently, each role was provided with exclusive relevant information for their position. Manufacturers received the information first, followed by exporters, and finally sellers. All negotiations were conducted in English, based on the rationale that despite being part of the International Business program, the students lacked confidence in using languages other than Spanish. This approach was chosen to provide students with the opportunity to practice and improve their English communication skills in a professional context, which is crucial for their future careers in international business. Conducting negotiations in English with their peers facilitated the potential for negative experiences and embarrassment to be overcome as the exercise progressed, and students had one hour to reach an agreement.

The negotiation time allotted for students was one hour, after which each team would present their results to the mega-game facilitator. The best results among the three-member teams would receive the highest grades, emphasizing that adherence to the rules was crucial for evaluation.

Following the general activity presentation, the activity commenced, and exporters and sellers were instructed to leave the negotiation space. Manufacturers were then provided with the following instructions:

- The cost of materials and labor for each digital device was \$400 USD.
- If more than 5,000 devices were manufactured, this cost would decrease to \$250 USD per unit.
- If more than 10,000 devices were manufactured, this cost would further decrease to \$220 USD per unit.

The manufacturer's objective was to maximize profits.

Manufacturers were then excused, exporters were called back, and they were given the following instructions:

- The cost for exporting under INCOTERM 2020 DDP per device was \$100 USD.
- Exporters aimed to achieve profitability that was double their cost.

Finally, exporters were excused, sellers were called back, and they were provided with the following information:

- They had a capital of \$5 million to purchase digital devices.
- The projected demand was approximately 8,000 units.
- They had to negotiate the quantity of units to purchase, considering that the maximum market value per unit was \$650 USD.
- The cost of sales per unit was \$25 USD.
- If they managed to have two more sellers within their team, their cost increased to \$28 USD but generated a sales reach of 10,000 units.

This research employed a qualitative approach, utilizing a semi-structured group interview as the data collection instrument with all students. The interviews were recorded to ensure accuracy in capturing the students' responses and to facilitate detailed analysis.

The group interviews were conducted immediately after the mega-game session, allowing students to reflect on their experiences and insights while they were still fresh.

The interviews were transcribed verbatim, and the data was analysed using thematic analysis. This involved coding the data to identify key themes and patterns related to the students' experiences and the effectiveness of the mega-game as an educational tool. The thematic analysis enabled us to draw meaningful conclusions about the students' learning processes and the impact of the mega-game on their understanding of negotiation techniques.

This study followed an action research methodology, which involves a cyclic process of planning, acting, observing, and reflecting. Action research is particularly suited to educational settings as it allows for the practical implementation of innovative teaching strategies and their iterative refinement based on feedback and observed outcomes. In this context, the mega-game "谈判 Tánpàn" was designed and implemented as an educational intervention, and its effectiveness was evaluated through the collected data. The insights gained from this action research will inform future iterations of the mega-game and other similar educational activities.

Previously, the same class had been conducted without using "谈判 Tánpàn". After incorporating the mega-game, there was a notable improvement in student satisfaction, as reflected in the professor's evaluation results, which showed a 5% increase in overall group satisfaction. Students shared positive feedback about the experience, with comments such as, "it allowed me to practice my English without embarrassment and with the

help of my classmates", "I explored different alternatives to what others proposed and we negotiated for the future of the company", and "I learned that you cannot only think of yourself when negotiating".

4. Results

The utilization of mega-games in educational contexts demonstrated significant benefits compared to traditional teaching methods. Students employed diverse strategies during the negotiation exercise. While some adhered to the estimated problem parameters, others utilized divergent thinking to maximize their profits. Upon completion of the exercise, students expressed their interest in the activity as it provided experiential learning and allowed them to grasp topics that are typically taught in a theoretical manner. They found it enjoyable to negotiate with their peers to achieve mutually beneficial agreements.

Furthermore, negotiating in English helped them overcome previous fears and negative experiences with using a foreign language. Students reported that as the exercise progressed and they were in a trusted group, their fluency with the language improved significantly.

The name 谈判 Tánpàn was well received by the participants, who found it memorable and reflective of the game's focus. The choice of name also contributed to the game's international appeal, making it a relevant and engaging tool for students from various cultural and linguistic contexts.

The game rules for the negotiation exercise were that all discussions had to be conducted in English. There were no other constraints imposed on the students, which allowed them the freedom to think creatively and propose new deals. Students were encouraged to negotiate not only for a single transaction but also for long-term business arrangements. This flexibility enabled the emergence of innovative solutions and strategies that extended beyond the immediate scope of the exercise.

The dynamics of the game included fixed roles, with students not alternating roles to maintain confidentiality. Each role received specific information, and it was up to the individual to decide whether to share that information with others. This design was intended to simulate real-world negotiation scenarios where parties do not have complete visibility into each other's information.

Regarding the grading structure, innovative solutions conceived by students were not initially considered due to the simplicity of the game and its new introduction. However, one team designed a contract for a long-term relationship, which earned them additional marks. This demonstrates that while the grading structure was basic, innovative approaches were recognized and rewarded when they contributed to the game's objectives.

Students were required to document their process and outcomes by calculating both individual and group profits. Following this, they analysed their results in comparison to others to understand how they could maximize profits for both them and the entire group. This analysis was intended to improve overall business success and encourage a strategic approach to future negotiations.

One team discovered that by minimizing the exporter's profits and "sacrificing" their own role, they could obtain higher profits and achieve the highest grade. An additional secret prize was revealed at the end: among the six teams that did not receive the highest grade, the team member who achieved the highest profits in each role would also receive the highest grade. Other participants would receive a 20% penalty if they achieved their role objectives but were not the best in their category, and a 60% penalty if they did not. Students who did not participate in negotiations would not receive a grade.

In addition to the evident results, this mega-game succeeded in incentivizing creative thinking among some teams, resulting in alternative negotiations with "out-of-the-box" proposals. Some of the negotiated deals involved strategic alliances with counterparts, offering additional accessories or services that, despite increasing the price, remained attractive for purchase or simply generating commitments for future transactions such as discounts or exclusive rights or primacy on new technological developments. These outcomes reinforced not only their knowledge of topics like intercultural negotiation but also concepts they have learned throughout their studies such as the supply chain, value chain, competitive advantage, and value creation for the customer, demonstrating their ability to create win-win scenarios and trust that such scenarios can be realized.

The innovative solutions devised by the students were varied and strategic:

1. **Forming supply chain integrations through alliances:** Some teams collaborated strategically to integrate their supply chains, optimizing efficiency and reducing costs.

2. **Negotiating current purchases with conditions but signing agreements for future contracts with better win-win conditions:** Several teams negotiated ongoing purchases while securing agreements for future contracts with more favorable terms, showcasing their forward-thinking approach.
3. **Including services or variables that were not initially considered in the mega-game's parameters:** Students demonstrated their creativity by incorporating additional services or variables into their negotiations, expanding the scope of the deals beyond the initial framework.
4. **Incorporating innovation themes with exclusivity deals for future models to be launched:** Certain teams proposed exclusivity deals for upcoming innovative models, leveraging anticipation and market demand in their negotiations.
5. **Considering changes to the INCOTERM to make the business more attractive or including accessories in the phone sales to enhance the negotiation:** Some teams explored altering INCOTERMs or bundling accessories with phone sales to add value and make their offers more enticing, showcasing their adaptability and business acumen.

One of the main limitations in this action research work was the limited time allocated to the mega-game due to the class's short duration. As a result, the mega-game was applied on a small scale. However, based on the results obtained, it has been proposed to create a longer-lasting version of the game. This extended version would involve adding nationalities and a cultural map to the negotiators, creating profiles tailored to different types of negotiators that remain secret to other players, and changing the ways negotiations occur among them.

The implementation of this exercise within the educational environment lays the groundwork for the creation of future mega-games involving a larger number of participants. Given that negotiation is a flexible skill applicable in various disciplines, this game could be expanded to encompass multiple fields. The results highlight the effectiveness of experiential learning in enabling students to understand complex concepts and apply them practically. By engaging in negotiations and facing real-world challenges, students developed a deeper understanding of negotiation techniques, enhancing their ability to negotiate effectively in the future.

The integration of mega-games in educational contexts provides a dynamic teaching approach that surpasses traditional methods. By simulating real-world scenarios, students encounter authentic experiences that improve their problem-solving skills, critical thinking, and decision-making abilities. The positive feedback from students regarding their participation and enjoyment suggests that mega-games have the potential to enhance the learning experience and facilitate a more comprehensive understanding of complex topics such as international negotiation.

Expanding the mega-game to include multidisciplinary teams with participants from different areas or departments of the company, as well as other supply chain stakeholders, could enhance the experience and provide a more realistic simulation of negotiation scenarios in diverse organizational contexts.

By creating a mega-game experience with more roles, actors, nationalities involved, and different negotiation strategies across disciplines, we continue to be amazed by the innovative capacity that new generations forge throughout their professional careers.

5. Conclusions

The mega-game 谈判 Tánpàn proved to be an effective strategy for teaching complex concepts of international negotiation. Through the experiential learning approach, students were able to actively engage in simulated negotiation situations and tackle real-world challenges.

The results obtained revealed that experiential learning provided students with a deeper understanding of negotiation techniques and enabled them to apply them practically. By assuming specific roles and negotiating as a team, students acquired problem-solving, decision-making, teamwork, and effective communication skills.

Additionally, the integration of the mega-game showcased a dynamic and enriching teaching approach. Students were engaged and motivated throughout the process, allowing them to learn more meaningfully. The positive feedback from students evidenced their enjoyment and perception that the exercise provided them with a rewarding and enjoyable learning experience.

These findings support the notion that mega-games can be valuable tools for the development of soft skills across different academic disciplines. They also suggest the importance of incorporating experiential approaches in education to enhance understanding and application of complex concepts. Ultimately, the 谈判 Tánpàn mega-

game exemplifies the potential of innovative educational methodologies, emphasizing the role of immersive and interactive learning experiences in fostering holistic student development.

Declaration of Interest

This is to acknowledge that the authors report there are no competing interests to declare.

Acknowledgements

We want to acknowledge the technical and financial support of the Writing Lab, Institute for the Future of Education, Tecnológico de Monterrey, Mexico, in the production of this work.

References

- González Moreno, S. and Montalvo, C. (2018). La gamificación en la educación superior mexicana: un estudio exploratorio. Gamificación en Iberoamérica Experiencias desde la comunicación y la educación. Editorial Universitaria Abya-Yala.
- International Trade Administration (2022). *Know your incoterms*. International Trade Administration | Trade.gov. <https://www.trade.gov/know-your-incoterms>
- Iparraguirre, A. (2022). Curso de actualización de la disciplina (CADI) Megajuegos en espacios de aprendizaje, Universidad de Buenos Aires, Universidad de San Andrés, Ministerio de Cultura de la Nación Argentina.
- Martínez, E., Olivas, E., Ramírez-Cavazos, I. (2023) Kuxtal: Student Motivation Through Mega-games in Higher Education Design Students. Proceedings of the 17th European Conference on Games Based Learning. 390-400.
- McMillan, S. (2015). 60+ Students Play ALLIANCE Political Science Mega-game - Trailer [Video]. YouTube.
- Robledo-Rella, V. and Garcia-Castelan, R. and Medina Herrera, L. and Ramirez de Arellano, J. and Guerrero, I. (2017). CocoGame: A funny app to learn physics and math. 1-4.
- Schell, J. (2019). *The Art of Game Design: A Book of Lenses*. Third edition. Carnegie Mellon University and Schell Games. Pittsburgh, Pennsylvania, USA.
- Wells, S. (2019). Playful Learning 19: mega games, promoting play and wellbeing, University of Bristol, Digital education office. Retrieved from <https://educationworks.blogs.bristol.ac.uk/2019/07/suzi-playful-learning-19/>

About the Authors:

Aline Castillo Moreno PhD candidate in Finance and Business Administration, is the CEO of CLEADERS with extensive experience in international business, finance, and education. She has a strong academic background, speaks five languages, and specializes in export development, risk mitigation, and global value chain improvement.

Mario Alberto Caudillo Melgoza Animation and Digital Arts B.A., Mobile Gaming MSc, and PhD in Educational Innovation, over 10 years of experience as professor. He researches game-based learning, AI in education and human flourishing. In his current role, as full-time professor at Tecnológico de Monterrey, he has successfully implemented educational interdisciplinary innovations using technology.