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DeepSeek R1 as an AI Simulation in ESP Classes for Enhancing Negotiation Soft Skills in Moroccan Higher Education

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RESUME

Cet article traite d'une expérience de quatre semaines utilisant DeepSeek R1 pour enseigner des techniques de négociation à des étudiants en master de droit et de sciences politiques à l'université Ibn Tofail au Maroc. L'étude a porté sur 30 étudiants répartis en cinq groupes de six, et les données ont été recueillies au moyen d'enquêtes et de tâches de réflexion. Les résultats ont montré que le langage de négociation, les stratégies, les compétences en communication et le travail d'équipe étaient les compétences non techniques qui s'étaient le plus améliorées. L'intégration d'un enseignement de la négociation basé sur l'IA pourrait potentiellement améliorer les compétences en matière de négociation.

MOTS-CLÉS : DeepSeek R1; AIED; négociation IA ; négociation homme-agent.

ABSTRACT

This article comes to play into the context of ESP by integrating DeepSeek R1 for teaching negotiation skills for Master students of legal conflicts and political sciences at Ibn Tofail university, Morocco. The experiment lasted for four weeks through four sessions where 30 students formed randomly five groups of 6 students. For data collection, a survey research and two reflection tasks were given to the groups for evaluating the agent. The findings show that the participants considered legal negotiation language, negotiation strategies, communication skills, and teamwork/group cooperation to be their most improved soft skills with other practice capabilities. Most of the participants declared that negotiation simulations with the agent reflected real contexts with flexibility, creativity, and instant feedback. Also, the most participants shared positive attitudes towards DSR1 and gave suggestions for more developments. The integration of such AI pedagogy in Moroccan higher education will surely provide opportunities for developing negotiation skills.

KEYWORDS : DeepSeek R1; AIED; AI Negotiation; Human-Agent Negotiation.

1 Introduction

In the past, ESP classes in higher education (HE) depended on physical simulation-based on training through various activities like role-plays, case studies, and exercises to teach various soft skills as negotiation. The latter, can be somewhat difficult to define and most researchers describe such soft skill as an ill-defined domain and a slippery concept (Aleven et al. 2008; Nfida & Houat, 2024). As a common definition, Fells (2010) describes negotiation as a "process where two [or more] parties with differences which they need to resolve are trying to reach an agreement through exploring for options and exchanging offers" (p. 3). The main purpose of negotiation is to settle peace in decisions without irrationalities. As it is known, negotiation training courses and programs are designed to teach trainees how to avoid irrationalities and behavioral biases and behave in a manner that maximizes outcome of all negotiation situations (Lewicki, 1997). To achieve this endeavor, ESP is always a vibrant area, not like EGP, trying to use diverse methodologies within real contexts (Strevens, 1988; Dudley-Evans & St. John, 1998a) and most negotiation practitioners have recently moved from physical simulations (abstractedness) or paper-based learning to what has been termed, nowadays, as Artificial Intelligence explosion, especially Generative Artificial Intelligence (GAI) with chat or-text-based systems. There has been, in fact, an enormous growth in the number of articles about AI implementation and/or integration for teaching soft skills like negotiation where researchers and educators have claimed that negotiating skills can be acquired not only by face-to-face contexts, but also by AI negotiation systems; they are the key for teaching negotiation skill development with safety and without extra expenses. This claim is rooted in the idea that negotiation is best taught by experience, "doing it." It is said through some practical studies that GAI, like ChatGPT and other western AI tools, is a transformative way for experiential education where negotiation teachers can teach with more creative approaches (Core, et al. 2006; Zawacki-Richter, et al. 2019). Accordingly, soft skills as negotiation needs such authentic pedagogical instructions for practice-based realism to achieve effective negotiating training; the implementation of AI in ESP classes within the context of negotiation skills courses/modules can help learners' understanding of negotiation strategies and how they might improve their performance in English and other negotiation skills.

Thus, this study attempts to design a human-agent pedagogical task for teaching negotiation skills to legal conflicts and political sciences students at Ibn Tofail university in Kenitra, Morocco. The proposed teaching task, called "Let's Negotiate with DeepSeek-R1", focuses on three areas: (1) to investigate the effectiveness and learning outcomes of using the negotiation simulations, (2) to explore students' perceptions of the implementation of the negotiation simulations using the agent and (3) to offer recommendations for improving the negotiation simulations as a part of a practice model.

2 Literature Review

AI negotiation has been considered as one of the challenging fields for researchers for many years especially with the first advent of automated agent negotiation (AAN) where various research studies have been experimented and conducted (Jennings, (2001); Aydogan, 2012); Sanchez-Anguix, (2014). The community has initially started to investigate agent-agent negotiations in terms of performance by holding an international competition in the field of agent-based negotiation to facilitate research and provide benchmarks for the community (Jonker, et al. 2017). recently, thanks to the new AI generation with powerful Large Language Models

(LLMs), researchers have started to give their attention to human-agent negotiation research with text-based systems and, thus, new leagues in the international competition regarding human-agent negotiation have been introduced (Mell, et al. 2019). Researchers and educators can also use machine learning (ML) and other artificial intelligence (AI) features to improve the ways humans negotiate, as well as train machines how to negotiate (Dinnar, et al. 2021). Some of AI agents contain humanoid animated avatars have the ability to see and hear the human participant (Aydogan, et al. 2020; Divekar, et al. (2019a) some negotiate through a

text-based chat system (Jonker, et al. 2016); Rosenfeld, et al. 2014) and others using an immersive room where agents appear as human-scale animated avatars in an extended reality environment (Divekar, et al. 2019b). AI, in general, has affected the term 'simulation' and made it problematic because the field is fast-moving and conceptions are being altered at fundamental levels either in symbolic or experiential simulations, where the two types are integrated and the distinctions are breaking down by employing them at once (Barton & Maharg, 2006; Maharg & Owen 2007). In the literature, human-agent negotiation is being tackled currently in different ways: looking for a way to outperform people by taking into account cultural differences of the opponents in negotiation (Haim, et al. 2012); the use of facial expressions and emotions to explore the effect on outcomes (Prajod, et al. 2019); exploring the effect of argument usage in negotiation (Rahwan, et al. 2003); including the use of multiple modalities to explore human-agent negotiation dynamics (Keskin, et al. 2021); assessing large language models to provide accurate estimates of concreteness, valence and arousal for multiword expressions (Martínez, et al. 2025); and using agents to train people for future negotiations (Gratch, et al. 2016). The Chinese AI research launched, on January 20, 2025, DeepSeek's R1 simulation model which shocked the AI industry in the United States, causing financial loses. The young Chinese company-DeepSeek model is developed with a small investment of $5.5 million despite limited resources and amid U.S. technology restrictions on China breaking down the idea of big investments to be a market leader. Before the emergence of DeepSeek, the market was dominated by American AI tools, like ChatGPT, Claude, Gemini, and Copilot, in all domains as negotiation training by exhibiting human-like abilities with strong language models and algorithms. In the last few years, one side of researchers believe that AI in negotiation research has provided assistant and automated agents to meet the needs of the labor market and increase productivity (Brynjolfsson & McAfee, 2014), and help negotiation students in higher education in an enhanced way. Although these positive aspects, the other side of researchers doubt the tool and arouse users to pay attention to the negative aspects of GAI specifically automated negotiation agents; according to the report of the World Economic Forum, by 2025, artificial intelligence will displace 75 million jobs in the world, but will create 133 million new jobs (WEF, 2025). So, learners should learn new updated strategies of negotiation and AI literacy (new 21st century skills) for understanding how such GAI tools work if they want new jobs because AI has shaped our way of life raising various issues as authenticity, copyrights and digital manipulation (Marcus & Davis, 2019), and personal information of users. In higher education, generative artificial intelligence, which has the potential to create personalized learning environments, also carries risks such as the spread of misinformation (Bender et al., 2021). So, there is a need not to take AI 'black box' for granted and bear in mind the positive and negative aspects.

DeepSeek, which is under the study, is an open source with a sophisticated large language model that garners interest. The model features a large-scale pre-trained structure and is based on transformer architecture. The approach, which focuses on understanding and generating code, can generate extremely accurate results in a wide range of programming languages. The degree of complexity of DeepSeek's contextual understanding and inference abilities is one of its unique selling points. The model can accurately interpret instructions and perform consistently, even on challenging tasks. More importantly, DeepSeek supports multiple languages and has good language translation capabilities. The outcomes of DeepSeek's agenda-setting model R1 are far more remarkable. DeepSeek-R1 (as cited in DeepSeek, 2025) excels at tasks centered on education and STEM (math, coding, and engineering). It outperformed every other model in its field. Additionally, it outscored models like GPT-4o (32.9%) and Claude-3.5 (38.9%) when it came to coding and software engineering jobs. More, on tests like document analysis and extended text comprehension, DeepSeek-R1 demonstrated strong performance (as cited in DeepSeek, 2025). To stay relevant, the model can generate specialized outputs in a variety of domains because of the size and diversity of the dataset utilized in the training process. It provides promising horizons (more real situations) that Large Language Models (LLMs), Smart Algorithms (SAs), and Mental Models (MMs) can provide in the process of teaching-learning (e.g., including correct language, wise conversations, emotions, trust). So, the present study is the first initiative to integrate this young Chinese AI in higher education to check its effectiveness within the context of negotiation skill development and its

ability to transfer learning as the major objective of negotiation training is to transfer negotiation skills to trainees (Nadler et al. 2003). Training literature supports that training transfer depend on three main factors: quality of training methods, motivation, and characteristics of trainees, and organizational environment (Salas and Cannon-Bowers, 2001a). AI has the ability to enhance training methods by providing more real contexts and make students feel better and motivated to learn on the grounds that such tool meets most learning styles.

AI negotiation simulations either in legal education, business education, or other areas, play a paramount role for cultivating students' skills using practice-based learning especially in ESP classes in higher education. Keys and Wolfe (1990) proposed in their article (The role of management games and simulations in education and research) the importance of using artificial intelligence and expert systems to provide coaching in simulations. To support this, Torregrosa and Sánchez-Reyes (2011) state that simulated negotiations in ESP classes motivate and immerse learners in specific areas of the target language in which practice is needed (p. 93). For legal conflicts and political classrooms, for instance, Šulovská (2023) adds when a simulated negotiation is used in an ESP classroom, it can support and enhance what is taught in political science courses with the added bonus of language practice (p. 26). In the business field 'learning by doing' in a 'bona fide' business milieu is an effective way of learning how to manage a business, how to solve problems in an organization, how to manage risk and how to minimize the gap between theoretical knowledge and practice (Colwill & Birchall, 1992). Therefore, through AI-simulations, students can acquire negotiating vocabulary phrases and develop/or cultivate soft skills including negotiation techniques and strategies; as a pedagogical tool, simulated negotiations offer immersive experience and thus provide the opportunity for students to learn from first-hand experience and understand real-world environments (Usherwood, 2018; Asal & Blake, 2006; Irrera, 2021). To support more, AI virtual simulation is considered as a promising tool in higher education (Popenici & Kerr, 2017; Zawacki-Richter et al., 2019a) and especially for ESP classes to teach the ill-defined domain of negotiation skills and solve related problems.

For this reason, negotiation teachers are always dynamic to bring innovative ways to the process and achieve effective negotiation either with simple simulations or mega ones in real contexts. Thanks to the sophisticated features of AI, practitioners have shifted from traditional role plays simulations, depending on human-human negotiating training, to human-agent (virtual human) negotiating training for more promising pedagogical instructions to meet students' needs. OpenAI, for example, which was founded in 2015, has invested in AI with a gigantesque budget for smart (negotiation) algorithms along with other powerful corporations like Microsoft, Amazon, Meta, Apple, Alphabet, etc; they know that intelligent tutoring systems/or agents with strong smart algorithms already have a massive impact on negotiation practice and, thus, a fierce competition to monopolize soft skills education field, creating a subfield called AI education (AIED). In recent years AI tools have human-like abilities such as using language (natural language processing), learning, adapting, self-correcting and using data analysis to accomplish complex tasks (Liang et al., 2021; Hwang, 2003; Hwang & Fu, 2020).

3 Theoretical Framework

This study is based on negotiation simulation in practice using online simulations within AI DeepSeek R1 model. In negotiation practice, roleplays simulated scenarios are the key for effective negotiation; Curhan (2023) mentioned in his recorded conference that roleplays are not going to be replaced, but they are going to be enhanced with AI. This practical study focuses on whether the DeepSeek R1 model can enhance practice in negotiation skill development within ESP classes in Moroccan higher education. Furthermore, according to the theories of ESP, students are more likely to learn a language in context rather than by studying the structure of the language itself (Yaumi, 2012) and negotiating is considered one of the key communicative events to foster negotiation skills (Dudley-Evans and St John, 1998b). Besides, Harding (2007) adds that due to the specific focuses of English for specific purposes programs, teachers often design practice tests for the specialism. So, this study is considered as a practice test on implementing and evaluating negotiation simulations through AI for Moroccan Master students (legal conflicts and political sciences) at Ibn Tofail University.

In addition to that, the negotiation simulation would also take an advantage from theories in Content and Language Integrated Learning (CLIL) where students can learn two things: negotiation skills through ESP which would give also a chance to learn English language, negotiation knowledge, communication, among others. CLIL is widely known as a "dual-focused approach" that gives equal attention to language and content (Mehisto, et al. 2008). In relation to that, Leontjev and DeBoer (2020) show that assessment in the CLIL context also focuses on "learner content, linguistic knowledge and strategies for enhancing learning content and language (p. 1); a dual focus on language and content. Hence, the present study on negotiation simulations in DeepSeek R1 would be bolstered by the dual focus on pedagogical approaches and ESP language.

4 Research Questions

The empirical research has shown the gap and inadequate practical studies in AI implementation in negotiation practice, especially regarding the Moroccan higher education. The main purpose of the study is to highlight a particular stress on the practical gap shown in the literature and use empirical scrutinization to collect primary data by the negotiation simulations in the ESP and negotiation training framework of a master program. The study delves mainly into three research questions:

1) How effective is the DeepSeek R1 simulation in negotiation practice and what are the master participants' views about the resultant skills transfer (the learning outcomes)?

2) What are the students' perceptions of the negotiation simulation implementation?

3) What are the students' suggestions for improving the practice model?

5 Research Methodology

The methodology is based on both: the quantitative and qualitative approaches. As Miles and Huberman (1994) state "it is getting harder to find any methodologists solidly encamped in one epistemology or the other" (p. 20). The reason behind such combination is to understand fully the phenomenon that researchers are studying. The study was based on a survey and a post-simulation reflection evaluation through two reflection tasks to scrutinize students' perceptions about negotiation simulations as an effective practice instruction, the implementation of negotiation simulation and further suggested improvements. This study could be taken as a crucial case in negotiation training in the ESP curriculum and offer an innovative model.

5.1 Participants

The present study used non-probability purposive sampling method for choosing a portion

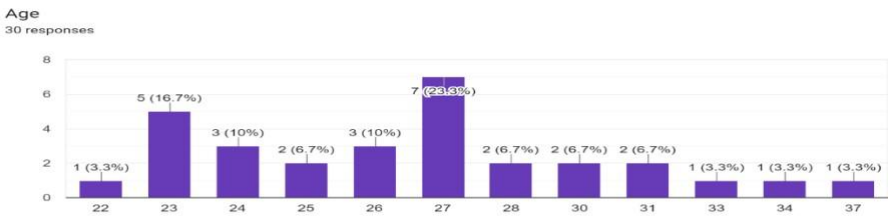


Fig 1: Participants' Age

of the finite population based on specific criteria and assumptions (Battaglia, 2008). The sample contained 30 master students of legal conflicts and political sciences from a public university in the north-west of Morocco. They participated in the negotiation simulations in late January 2025. There were 10 male participants (33.3%) and 20 female (66.7%) participants with ages ranged from 22 to 37 years old (the mean age = 26.93) as shown in figure 1.

As a part of efforts to improve language learning in Moroccan higher education, the ministry has signed an agreement with Rosetta Stone (Languages Online Platform) Company. For

proficiency levels of English of the participants in Rosetta Stone Platform, 33.3% of students (10) got C1, advanced level, 53.3% (16 students) got B2, upper-intermediate level, and 13.3% (4 students) got B1 intermediate level.

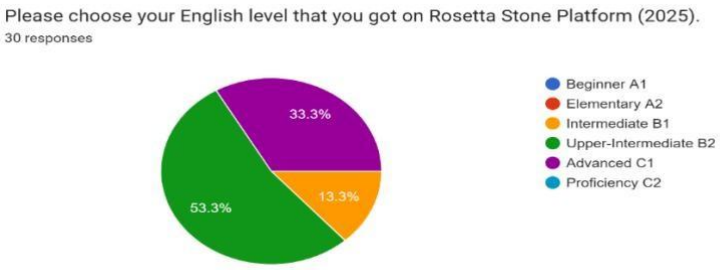


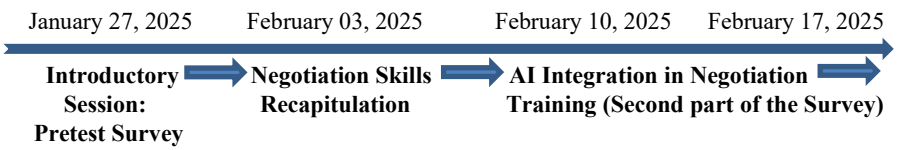
Fig 2: Students' level on Rosetta Stone.

5.2 Data Collection Procedures

The study depends on two different methodologies for collecting data, namely survey research via online google forms (see appendix A) and a qualitative analysis through two reflection tasks (see appendix B). Concerning the survey research, the survey mode includes numerical descriptions of trends, perceptions and attitudes of the population. The survey targets 30 students forming 5 groups with 5 topics. The main reason behind the students' survey is to get credibility and check their experiences about using DeepSeek R1. One week after the emergence of DeepSeek R1 and dominating the world market (January 20, 2025), four sessions were made for 30 students (see appendix C). The first session was presented as an introductory session, the second was made for recapitulating negotiation language and vocabulary phrases, skills, and tactics, while the two last ones were designed to integrate an online negotiation simulation task

- Let's Negotiate with DeepSeek R1 - as demo and controlled negotiation sessions with two reflection tasks at the end. Students were taught in an ESP module and took into account their study of negotiation competencies in some other modules either in Arabic or French. The simulations were related to negotiation simulation scenarios in legal and political contexts. The researcher gathered 30 students in the multimedia room with WIFI connection and laptops to explain to them the target of the study and what they were supposed to accomplish after this period of the experiment. As a next step, the 30 students were randomly divided into 5 groups; then, the time-limit was approximately 10 minutes for respondents to answer the questions of the first part of the survey related to their demographic background and English level, and gave it back to the experimenter in the same session. After designing and implementing negotiation simulation task in late January 2025, the second part of the survey was given to the participants. The questions mostly adapted from Dudley-Evans and St John (1998c, p.143). The questions were about the participants' perceptions of the negotiation simulation and English, their improved practice skills, the connection of the simulations with realworld contexts, their suggestions for improvements, their personal learning gains and suggestions for follow-up activities. The questions were designed carefully in English to make sure there was no ambiguity. The participants' consent was obtained and they were assured that the study devoted only for research.

The figure 3 below presents the timeline of the study sessions during the second semester of the university year 2025.



(First part)

Fig 3: Experiment Timeline.

6 The AI integration procedure in negotiation training

The ultimate goal for the experimental design is to assess the extent to which AI approach can enhance learners' negotiation skills. After the introductory session on January 27, 2025, during which the 30 students were asked to fill out the first part of the pretest survey, respondents were randomly assigned to form groups of 6 students. The other sessions, one week later, (see timeline in figure 3), received a three-week instruction on negotiation skills and AI Integration in negotiation simulation (Appendix C), This course focused on empowering participants to critically understand how AI's behavior is constructed and to negotiate effectively. The course, however, was not intended to teach students to be passive just using the AI agent, but rather to be fortified with AI literacy in order to avoid biases. In fact, AI literacy pedagogy is generally based on the principle of inquiry. So, incorporating AI in teaching negotiation skills does generally involve students to reflect on and negotiate in real simulation through employing negotiation language and strategies, and acquiring AI literacy and negotiation. Accordingly. AI specialists and educators around the world as well as organizations have worked to develop a framework of conceptual understandings as the basis for integrating AI in educational settings.

7 Results

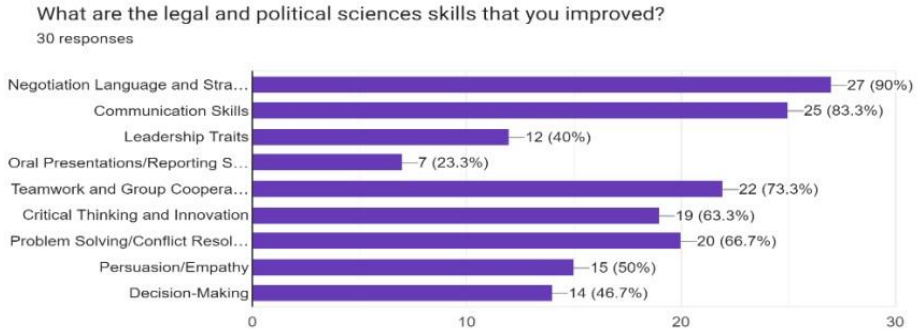
7.1 Participants' perceptions of the effectiveness of the negotiation simulation and the learning outcomes.

The participants' negotiation simulation contexts are presented in Table 1 based on win-win outcomes. Of the 5 selected topics, 3 were about legal conflicts, 1 was related to analysis of foreign policies between Morocco and Europe, and the last topic was about economic policies. The participants discussed and selected on their own the negotiation topics and without forgetting real contexts. All the topics were accepted because they were related to the legal education framework.

Groups	Negotiation Simulation Topics Based on Win-Win Scenarios
Group 1	*Legal Conflict about land borders*
Group 2	The Fisheries Agreement between Morocco and Europe (Foreign Policies)
Group 3	Signing a Free Trade Agreement between Morocco and England (Eco Policies)
Group 4	A Legal Conflict between two companies about Agreement Violation
Group 5	A Company and the Government (The company did not respect the Agreement)

Table 1: Negotiation Simulation Topics' Distribution

In relation to the learning outcomes, the majority of students were satisfied with the improvements of negotiation skills as shown in figure 5. 90% of respondents stated that they improved their negotiation language and strategies, 83.3% improved communication skills, 73.7% for teamwork and group cooperation, 63.3% for problemsolving, and other negotiation



skills with different percentages.

Fig 4: The improved negotiation skills

Students' reflection tasks have demonstrated more explanation about their improved negotiation skills. Participant (12) from group 2 said:

> « DSR1 negotiation scenarios were well-structured with different strategies in a good manner as a human". This quality motivated us to write well-organized scenarios and settle win-win results ».

The ESP language in DSR1 was rich in terms of vocabulary and phrases in negotiation process. Participants (23) and (24) from group (4) added:

Participant (23):

> « Language was not a daily one. DSR1 was smart to focus on the content (negotiation) and language used (ESP). It was clear and quite simple for me ».

Participant (24):

> « The language was communicative, academic, and professional. You feel as if you are in a real context debating and negotiating with a human negotiator. The only flaw was some difficult words ».

Concerning teamwork and group cooperation and communication skills, most participants enhanced these soft skills like participant (17) from group (3). She stated:

> « The group activities, in fact, aligned with negotiation skills because we practiced oral communication with each other through rehearsal and written communication in a human-agent negotiation using DSR1 ».

Another participant (27) from group (5) mentioned:

> « The agent was honestly flexible and creative for problem-solving. I felt that DSR1 cultivated my conflict resolution skills ».

The students' perceptions of reflecting realism through real-contexts. Students stated various attitudes about the DeepSeek R1 negotiation simulations in figure 7. 63.3% said that the agent reflected future job preparation, 60% reflecting real-contexts and challenging situations,

56.7% for developing negotiation language and strategies, 53.3% for enhancing negotiation skills. All in all, the findings showed various interpretations.

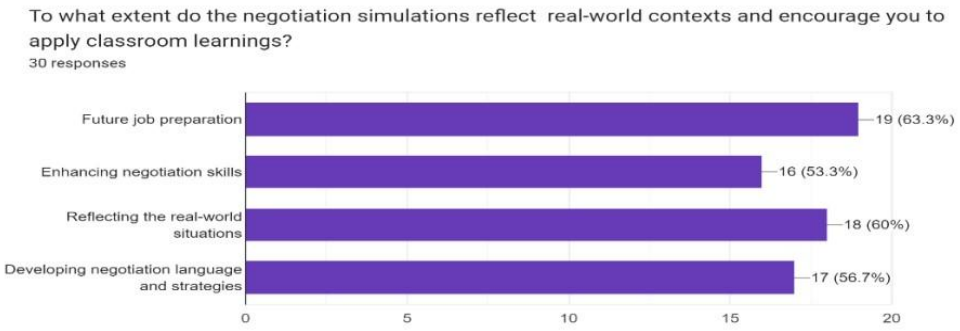


Fig 5: The reflection of real-world contexts

Participants (6) and (3) from group (1), for example, declared:

> « Negotiating with DSR1 made us feel as if we were in a physical context. Sharing ideas and using English enhanced our learning outcomes. It performed well and it was persuasive ».

Another one (20) from group (4) mentioned:

> « I feel to some extent that online simulations created a physical image which helped me to negotiate freely without abstractedness for future job preparation. The agent was predictable and challenging ».

To be more explicit, students were also asked to rate the agent to get a clear-cut image about their perceptions and support the previous results. They rated the agent with a positive indication by giving stars ranging from 1 to 5 as illustrated in figure 8. 6 students gave 5 stars, 18 students gave 3 and 4 stars, and 6 others rated 1 and 2 stars.

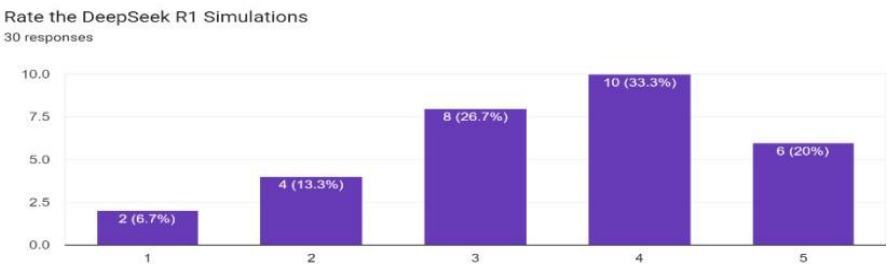


Fig 6: The rate of DSR1 simulations

7.2 The participants' suggestions for improving the simulations

The participants' suggestions for improving the negotiation simulations in the agent are summarized in Fig. 7. More than 46% of the participants mentioned that they needed to have more time for negotiation, more rehearsal for practice, more clear rules on group cooperation, and a detailed feedback from the agent to students.

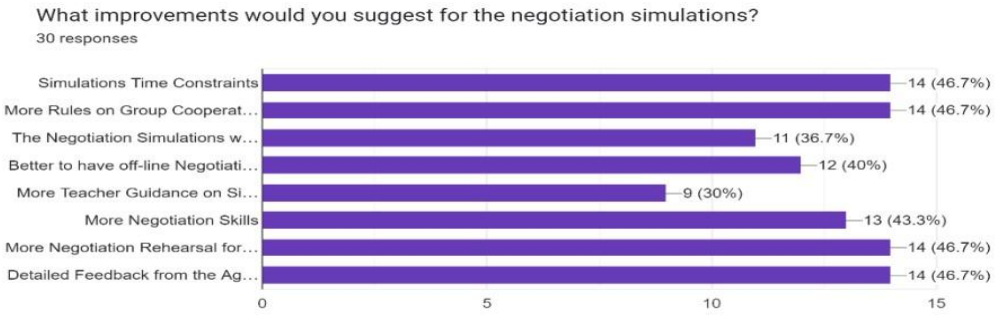


Fig. 7: Students' suggestions for improving the agent simulations

The two reflection tasks have supported the quantitative results for fully understanding of students' learning outcomes and suggestions. Participant (2) from group (1), for instance, stated the following comment:

> « For me, the simulations can be improved especially with providing more time. The group members, for example, can think and act freely ».

Another participant (15) from group (3) elaborated on more rules on group cooperation. She stated that:

> « Clear rules should be highlighted in the group and mutual understanding among the members for facilitating the negotiation preparation process and without wasting time ».

For rehearsal, more than 13 of the participants hoped to have more rehearsal time for practice before human-agent simulation. The participant (21) from group (4), for example, said:

> « This negotiation simulation highlighted many weaknesses, such as no adequate rehearsal and there was a lack of professional vocabulary and negotiation ettiquette ».

Such unsatisfactory suggestions might be related to the personalized feedback that they got from the agent. More than 13 participants called for more detailed and concise feedback about their negotiation. The participant (9) from group (2) mentioned:

> « I see that the agent feedback was too long and without giving a particular stress about the negotiation processes ».

Some other participants highlighted the need for more negotiation skills to cultivate them and get more opportunities. More than 12 participants said it would be better to have more soft skills. The participant (18) from group (3) added that:

> « In my opinion, the 21st century skills need new updated skills particularly for us as future leaders; we need AI literacy skills as presented during the second week ».

To stay relevant, the participant (1) from group (1) supported the previous statement where she tackled the need to get familiar with the strategies for filtering AI tolls list and choose the right one. She said that:

> « As far as I am concerned, before integrating an agent we should filter many AI tools by using the strategies that we learned during the third week ».

Furthermore, more than 11 students thought that it would be better to have off-line simulations. This choice could be attributed to their preference to negotiate face-to-face interaction. The participant (30) from group (5) claimed that:

> « For me, to negotiate first more scenarios in a human-human interaction is a good idea. Then, we could negotiate comfortably with the agent ».

The role of the teacher is very crucial in the process as a monitor and facilitator. More than 8 participants mentioned the importance to get more guidance from the teacher. The participant (11) from group (2) said:

> « In some cases, we feel blocked and confused. We appreciated the teacher's intervention to guide us in order not to squander time ».

In summary, more than 10 participants considered their negotiation simulations as a successful outcome. The participant (7) from group (2) added:

> « As a group, we were able to finish our task without constraints or difficulties. The agent responded to our negotiation as a human being ».

In addition to that, the students made suggestions for follow-up of the negotiation simulations as shown in figure 8.

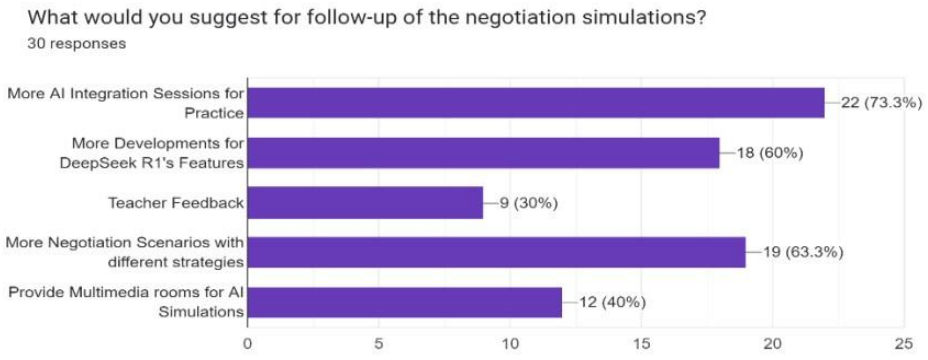


Fig. 8: Follow-up suggestions for the simulations.

73.3% of the participants suggested more AI integration sessions, 63.3% called for more negotiation scenarios and strategies, 60% saw that the AI features should be more developed for better performance, 40% for providing multimedia rooms, and 30% as a need to teacher feedback.

Participants (25), (26), (28), and (29) from group (5), for example, called for more pilot studies to AI integration. They stated:

> « We need more AI integration sessions for assessing AI tools. We suggest at least one semester for piloting the agents in order to check their strengths and weaknesses ».

An important statement was made by participants (8) and (10) from group (2) concerning the developments of DSR1 features. They said:

> « When we were negotiating with the agent, something went wrong and the agent told us that the server was busy!! Try it again!! This was the only problem that we encountered. DSR1 company has to develop the agent to avoid such technical problem ».

Others like participants (4), (5), (13), (14), (16), (19) and (22) thought that university leaders should provide infrastructures as multimedia rooms and AI labs for negotiation students.

In summary, the majority of students appreciated the AI agent (DSR1) and considered as a promising tool for enhancing their learning and negotiation skills. 76.7% preferred DeepSeek R1 simulations, whereas only 23.3% chose traditional simulations humanhuman negotiation (without AI agents) as illustrated in figure 9.

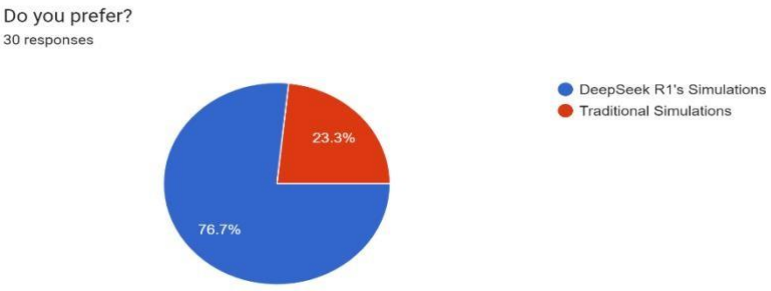


Fig. 9: Students' preferences

8 Discussion

Back to the participants' perceptions of the simulation, the majority were satisfied about the outcomes. They were motivated and pleased with the DeepSeek R1 approach and 76.7% liked the agent. For improved negotiation skills, negotiation language and strategies had the highest percentage, followed by communication skills and other competences. The agent succeeded to apply Content Language Integrated Learning (CLIL) in a well-designed manner by integrating ESP and negotiation skill development as in Privas-Bréauté article (2016) which aimed at highlighting the didactic added value of the creation of avatars in virtual worlds when it comes to learning English for specific purposes. From the other side, oral presentation skills and leadership traits had the lowest rate; it can be seen that participants focused on improving their negotiation practice between two parties more than reporting skills and leadership knowledge, aligned with the findings of previous studies in the literature, and the participants perceptions were mostly positive, as demonstrated in the Stokes and Selin (2016). Besides, For the participants' improved skills, more than 70% of the participants attained better understandings about negotiation language and strategies, including English skills and tactics. What's more, they also improved communication skills, teamwork and group cooperation, and problem-solving skills. The results of this study confirm many previous AI integration studies (Turkle, 2015; Stevens, 2006). The current study provides additional first-hand data based on empirical investigations with Master participants. concerning the participants' perceptions of the implementation of the DeepSeek R1 (DSR1) negotiation simulations, close to 70% recognized that the agent directly reflected the real-world contexts of legal education like future job preparation and 60% reflecting real-contexts and challenging situations. These results support Frendo (2005) who mentioned that simulation should reflect realistic situations, in which learners are fully involved in the activity, without being afraid of making mistakes. Some participants faced some technical problems and inadequate time. These challenges are very important for the agent for more developments as stated in literature (Oshrat, et al. 2009). In addition, the participants developed, as stated in the two reflection tasks, the critical negotiation skills during the week (3) and week (4) through enhancing their critical thinking and conflict resolution via the demo and controlled sessions of the agent; such soft skills will surely help them for future workplaces. They also improved the spirit of teamwork and group cooperation as a part of practice competencies. For persuasion and decision-making, less than 60% credited these negotiation skills as the improved ones. For more evaluation to the effectiveness of DSR1, the participants gave 4.5 stars as a sign of realism. This study is also providing insights into one important case of legal negotiation simulation using AI agent with text-based system. The findings of the present study support the views in the related literature by showing the actual pedagogical practice of legal negotiation simulation with Master students in the Moroccan context.

In terms of the legal negotiation simulation improvements, less than 47% of the participants needed more time for better simulations practice, more rehearsal, and more rules on group cooperation for effective learning. They also preferred to rationalize the DSR1

platform by providing concise feedback for their practices. Less than 41% chose to practice off-line the simulations. Some of them preferred face-to-face simulations and others refused to learn with innovative practices (reflection tasks). Furthermore, the participants also considered the negotiation simulations as successful ones; they mentioned that they needed more negotiation skills and teacher guidance. In relation to follow-up suggestions, more than 73% of the participants hoped to hold more AI integration sessions for practice. They also suggested more negotiation scenarios with different strategies with a rate less 65%. The DSR1 needed more developments in its features. More than 39% mentioned the idea of providing multimedia room because the setting has a great impact as stated in literature . As they stated in their reflection tasks, AI should be incorporated into classroom activities as much as possible although Ellis and Johnson (2002) claimed that in simulations, learners can be themselves in the imagined situations. Such claim will waste time for learners and learn in abstract contexts. The results of this study provide other important suggestions for integrating AI legal negotiation simulations in the Moroccan university.

9 Conclusion

In conclusion, DSR1 and the creation of legal negotiation simulations is undeniably an agent that facilitates the development of linguistic and general competences of ESP and cultivate negotiation skills. Using a human-agent simulation to learn negotiation skills is part and parcel of "experiential education" which is characterized by creating real contexts. Students should thus bear in mind that the ultimate aim is to help them practice the language in both personal and professional contexts.

As an important part of legal English practice teaching, this study demonstrates the design and implementation of legal negotiation simulations through DSR1 in a Moroccan university context based on the perspectives of 30 Master participants via a survey and reflection papers analyses. All in all, Master participants were satisfied with the AI approach used for legal negotiation simulations. They considered negotiation language and strategies, communication skills, and teamwork/group cooperation to be the most improved skills with other practical abilities in real contexts (realism). concerning improvements, providing concise feedback from the agent, more time, more rehearsal, and more rules on group cooperation were classified as a priority.

This study presents a comprehensive pedagogical instruction for using AI with text based-system in legal negotiation simulations in practice teaching. The findings of this study show guidance for the Moroccan higher education on how to integrate AI simulations, based on empirical evidence. The limitations of this study can be related to some DSR1 weaknesses and approaching only Master students without using treatment group and control group for more concise research. One survey and two reflection tasks analyses without official pre-tests, may limit the generalizability of the study findings. However, researchers and practitioners can replicate the study in other educational contexts by implementing other AI agents. For policymakers, this study is like a benchmark model that can motivate them to design and implement AI in legal negotiation curriculum. Future research can do further research for negotiation simulation teaching and AI pedagogical models in different ways.

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Appendix A: Students' Survey

Part 1:

1. Profile: Gender_____ Age_____
2. Please choose your English level that you got on Rosetta Stone (Please ✓).

1. Beginner	2. Elementary	3. Intermediate	4. Upper-Intermediate
A1	A2	B1	B2

5. Advanced	6. Proficiency
C1	C2

Part 2:

3. What are the negotiation skills that you improved?
   - Negotiation language and strategies
   - Communication skills
   - Leadership traits
   - Oral presentations/reporting skills
   - Teamwork and group cooperation
   - Critical thinking and innovation
   - Problem-solving and conflict resolution
   - Persuasion/empathy
   - decision making

4. To what extent do the negotiation simulations reflect real-world contexts and encourage you to apply classroom learnings?
5. What improvements would you suggest for the negotiation simulations?
6. What would you suggest for follow-up of the negotiation simulation?

Appendix B: Two Reflection Papers

TASK1/week 3:

Write a reflection paper (1-2 pages) by answering the following questions:

1. Were DSR1 negotiation scenarios well-structured?
2. Were negotiation problems analyzed systematically (win-win outcomes)?
3. Did the Agent take attention to ESP language and content (negotiation)?

- Additional Remarks: ……..

TASK2/week 4:

Write a reflection paper (1-2 pages) by answering the following questions:

1. How did DSR1 perform?
2. Was it persuasive, predictable, or challenging?
3. Did it align with negotiation tactics and styles?

- Additional Remarks: ……..

Appendix C: The Project Title: "Let's negotiate with DeepSeek R1"

DeepSeek R1 Integration/Unit Overview
Four Weeks
One Day Per-Week/90 Minute Time Blocks

Week	Topic	Important Questions	Main objective(s)	Process, Activities and Materials
1	Introductory Session	_____	Students will be able to: - Have an idea about the goal of the project. - Fill out the first questions of a survey.	- A PPT showing the participants an overview of the 4-week AI Integration Unit in Negotiation Classes. **(40min)** - Discussion **(30min)** - First part of the survey. **(20min)**
2	Introduction to AI and Negotiation Skills	What is AI? What are the types of AI? (DSR1) What is AI Education? Why does AI Education matter in negotiation skills? (DSR1) What are the main AI Literacy Skills? What are the key negotiation concepts?	Students will be able to: - Recognize the different types of AI. - Understand the reason behind incorporating AIED in negotiation classes. - Get familiar with AI Literacy Skills before utilizing AI Tools for negotiation practice. - Understand negotiation concepts	- Students shared in an introductory whole-class activity their experience on Rosetta Stone and the position of ESP. The main goal was to check their levels and build a good rapport with the experimenter and bring students' AI interests into the class. **(30min)** - The experimenter presented in the PPT slides introductory data related to AI, AIED, and AI Literacy (AIL) like definition, purpose, and key negotiation concepts as BATNA, ZOPA, Distributive vs. Integrative, etc. It was done through a blend of whole class instruction with small groups **(30min).** - Discussion **(30min)**
3	The integration of DeepSeek R1/ A Demo	What is DeepSeek R1? What is the reason behind choosing DeepSeek R1? What are the strategies for selecting the right AI agent? What are the Ethical considerations for utilizing DeepSeek R1? Did it integrate negotiation styles and respect scenarios?	- Students will be able to: - Get familiar with DeepSeek R1. - Recognize the strategies for selecting the right AI agent - Read the agreement and create accounts - To assess the effectiveness of the agent through a reflection task (1-2 pages).	- Students watched a video introducing DeepSeek R1 and its features. **(10min)** - PPT slides about the strategies for selecting the right AI agent and the ethical considerations. **(10min)** - Students learnt to create accounts. **(10min)** - A Demo: Students created accounts on DeepSeek R1 and wrote simple scenarios by designing the agent's personality, goals, and negotiation tactics. The duration for the task is **(30min)** - Discussion - A Reflection Task (1): Students checked how DeepSeek R1's responses integrated negotiation styles and respected scenarios. **(30min)**

4	A controlled negotiation environment	How did DSR1 perform? Was it persuasive, predictable, or challenging? Did it align with or challenge negotiation tactics?	- Students will be able to: - Analyze week 3 demo results. - Write a controlled negotiation environment by integrating negotiation strategies. - Learn to shape DeepSeek R1's behavior for specific negotiation styles. - Retest the negotiation in a revised scenario. - Assess DeepSeek R1's effectiveness as a negotiator. - Write a reflection paper (1-2 pages).	- Students analyzed the demo and did modifications. - They proposed a refined negotiation scenario where DeepSeek R1 could play a role as an opponent. One-page scenario proposal (context, goals, DeepSeek R1's role). **(25min).** - Students did a Re-Test with the AI agent with a revised scenario. **(15min).** - Students recorded and analyzed the prompts by checking negotiation language and negotiation strategies. Also, they added negotiation skills and improved adaptability, clarity, and alignment with negotiation objectives. **(30min)** - Discussion. - A Reflection Task (2): Students checked how DeepSeek R1's responses aligned with or challenged negotiation tactics. Students discussed the strengths and weeknesses of DeepSeek R1 in particular and showed their opinions about the project in general. **(20min)**