

Gamification of the Intelligence Studies (GAMINT): A Game Based Approach to Learning Human Intelligence Dynamics



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Gamification of the Intelligence Studies (GAMINT): A Game-Based Approach to Learning Human Intelligence Dynamics

This paper presents a game-based approach for learning intelligence, and more specifically human intelligence (HUMINT) concepts, by challenging the learners/players to find and adopt the most efficient methodologies of influence commonly followed by agents (such as ego, ideology, authority, honey traps, money and religion). Our approach is named GAMINT, acronym for “Gamification of Intelligence”, and represents one of the few examples, if not the only example, of a boardgame purportedly designed for teaching the basics of HUMINT to intelligence students. We grounded our approach on a solid theoretical framework inspired by both classical and current intelligence literature, in order to deliver concepts that are general and current enough to address both historical and present scenarios. We then implemented and tested our approach through subsequent iterations, which allowed improving the methodology and the rules to achieve an effective learning outcome.

Keywords: gamification; game-based learning approach; intelligence studies; learning intelligence, GAMINT

Introduction

The game-based learning approach that we introduce in this paper is named GAMINT, an acronym for “Gamification of Intelligence”. It is a boardgame grounded on a solid theoretical framework inspired by both classical and current intelligence literature. The game has been purportedly designed to teach the basics of human intelligence (HUMINT) to intelligence students. The game has been devised to be scalable and extensible to allow future developments.

At the state of the art, GAMINT is one of the few examples where gamification and, more specifically, a game-based approach, has been applied to learning the basics of intelligence. If we consider boardgames, GAMINT is possibly the only example of gamification applied to learning fundamental HUMINT concepts, with only a notable

exception of a card game created by the CIA and then declassified and commercialized with the name “CIA: Collect it All”. This game, however, has a stronger focus on intelligence fusion and not an in-dept focus on HUMINT. Other kind of boardgames available in the general market have mainly an entertaining purpose and not a didactic one.

By grounding our research on the theoretical tradition of some prominent intelligence classics, like Kautilya's *Arthashastra*, Sun Tzu's *The art of war*, and other notable contributions that will be further discussed in the “Materials and methods” section, we devised the game without tying it to a fixed historical context. In fact, at the beginning of the game, the players must draw a random scenario card that will set the context for the rest of the session. An experimental phase followed the implementation. During the tests, the characteristics and rules of the game have been improved through subsequent iterations, by taking into account the feedback received from the participants of the control group. The structured results of the tests proved the effectiveness in enhancing the learning experience of the participants.

The overall project has been introduced as part of the activities of the “Laboratory on Gamification and Intelligence” of the Italian Intelligence Society (Società Italiana di Intelligence). The laboratory has been founded and is managed by Dr. Stefano Musco, who devised and led the GAMINT project. The initiative is especially relevant considering the purposes and objectives of the Italian Intelligence Society, which is a scientific society expressly established to promote the diffusion of the intelligence studies in Italy.

The paper is structured as follows. The section dedicated to the “Literature Review” explores the state of the art in gamification, by firstly providing a general

overview on the related approaches, and then discussing the application of such approaches in fields affine to intelligence (e.g. military and strategic studies), as well some rare examples found in the literature on intelligence studies. The section “Materials and methods” describes the theoretical framework, the methodology, and the architecture of our game-based approach, as well as the phases and tests of the project. The section “Results, discussion, and next steps” summarizes the experimentation phase, by discussing the outcome and the roadmap ahead. Finally, the section “Conclusions” draw some final considerations on the present work.

Literature Review

According to a definition given by Juho Hamari in The Blackwell Encyclopedia of Sociology: “*Gamification broadly refers to technological, economic, cultural, and societal developments in which reality is becoming more gameful, and thus to a greater extent can afford the accruing of skills, motivational benefits, creativity, playfulness, engagement, and overall positive growth and happiness.*”¹ This definition can be declined in several different aspects of reality, including learning, where gamification has been applied to different educational levels and academic subjects.² In this regard, the aim of gamification is to influence the behaviour relevant to learning.

The importance of this educational approach has been growing over time, inasmuch as the literature dedicated some effort to try to build a theory of *gamified learning*³, even though extensive studies of the literature highlighted the need for “*more empirical work on specific elements with direct ties to theory and stronger experimental designs*”.⁴ Within this broader context, a further distinction can be made between approaches referred to as “game-based learning”⁵ and approaches which can be considered “gamified learning”⁶. A “game-based” approach makes use of a serious

game purportedly created to generate a given learning outcome, while “gamified” learning entails modifying an existing educational process by incorporating elements that make it more entertaining or “game-like”.⁷

According to the distinction made above, the approach that we introduce in the present paper should be considered as “game-based” rather than “gamified” learning, since we have developed a full-fledged boardgame for spreading awareness of the *intelligence studies* in the general public. However, our design choices and goals are inspired by some common principles underlying the “gamification science”, reason why we don’t disdain framing our approach within this larger perimeter.⁸

Gamification has been associated to a positive motivating effect for the learning process, at least in theory. This positive correlation seems to emerge from the “gamified learning” theory⁹, as well as from the psychological theory of “self-determination” applied to gamification.¹⁰ However, from an empirical perspective, the debate on whether gamification is an effective educational approach is still open.

Several surveys have appeared, which tried to assess the effectiveness of gamification on learning by analyzing the related literature. One of these surveys considered 34 empirical papers in the period 2010-2014 and highlighted a beneficial impact of gamification on motivation, behavior, and cognition.¹¹ A later survey spanning from the second half of 2014 to the end of 2015 considered 51 newer papers, 70% of which were found to be inconclusive and weak from a methodology viewpoint, whereas 23% reported a positive conclusive impact of gamification on learning and 6% a negative outcome.¹² There are also other studies suggesting that gamification is associated with positive effects, which appear to depend on the type of users and the context of application.¹³

A recent and thorough metanalysis by Sailer and Homner (2020) suggests that competition augmented with collaboration could have a positive motivational impact and gamification appears to be indeed an effective method for learning, although the cognitive factors contributing to successful gamification are not fully understood yet.¹⁴

We'll now look at gamification in fields affine to intelligence studies.

Gamification in the field of Strategic, Military and Security Studies

The idea of using a game to educate and prepare leaders to make good decisions is not new, especially in military environment. The wargaming is an activity maybe old as war itself, which has been used during many centuries by different human cultures trying to educate their decision makers to act during crisis in a “zero risk” environment.

There are several definitions of wargaming, but for the purpose of this paper we accept the one expressed in the Wargaming Handbook: “A *scenario-based warfare model in which the outcome and sequence of events affect, and are affected by, the decisions made by the players*”¹⁵.

We chose this definition because we believe that the interaction among human beings is the essence of the research in intelligence studies as it is in strategic, military and security studies. The interaction among different wills is what determine the uncertainty, and intelligence is basically an activity to reduce the uncertainty of an environment influenced by human activities. This led us to a concept of war depicted as a clash of different wills, as explained also by Karl von Clausewitz. In his “On War”, he stated: “*In the whole range of human activities, war most closely resembles a game of cards*”¹⁶, meaning that this activity is either dominated by the fate, or by human decisions. It is interesting to notice that he compares war not to a duel or to a physical interaction between two opponents, but to a card game.

In accordance with Caffrey and Matthew¹⁷, during the Nineteenth Century in Prussia, Clausewitz was not the only military that envisaged some similarities between game and war. Someone started to think of how to employ a game to teach war to other militaries that never had experience of a real combat situation.

Until this time, war games were used to educate the noble class. Chess is an example of that kind of wargame. In 1824 Lieutenant Georg von Reisswitz created the first modern wargame by using a topographic map covering 10 square kilometres, some wood blocks representing 26 battalions, 40 squadrons, 12 batteries and 1 pontoon train, a dice for deciding fire effects, the results of hand-to-hand attacks, and a small book of six chapters containing the introduction to the use of the equipment and the rules.¹⁸ The *Kriegsspiel* (wargame) by Lt. von Reisswitz was the first of its kind. It was easy to understand, easy to use and easy to transport because all equipment was contained in a mahogany box as big as a shoe box.

At the beginning, *Kriegsspiel* became famous among those Prussian young officers that did not have noble origins and could not take advantages of war experience from their fathers. The game was so efficient to simulate the dynamic of a battle that it raised the Prussian army's Chief of Staff general Karl von Müffling attention. After a demonstration, he exclaimed: "*It is not a game at all, it's training for war. I shall recommend it enthusiastically to the whole army*"¹⁹. Following the Prussian stunning victory in 1866 and in 1870, all the Prussian practices related to war became famous and *Kriegsspiel* was adopted by many armies around the world, sometimes with fancy translations (in Italy it was translated as *Crispillo*, which doesn't mean anything in Italian, but it sounds like *Kriegsspiel*).

From that point to nowadays, all military wargames have shared some common aspects. According to Peter Perla²⁰ a good wargame must have: (1) objectives; (2) a scenario; (3) a database; (4) models; (5) rules; (6) players; (7) analysis.

The Relationship between humans is the key, as we underlined at the beginning of this paragraph, by also referring to von Clausewitz's words and to General von Müffling's intuition when he looked at the *Kriegsspiel*. In Perla's word: "*Ultimately, however, there is one function that cannot be given to a machine without fundamentally changing the character of a game and turning it into something else. A real wargame must have human players whose decisions affect and are affected by the flow of game events. A game is most effective when those players can be cast in operational roles and be given the information and responsibility required to make the decisions appropriate to those roles*".²¹

Gamification in the field of the Intelligence Studies

Only a few studies have addressed the application of game-based and gamified learning approaches to the study of intelligence.

One of the earliest contributions on this topic proposed the use of a game-based approach for teaching strategic intelligence, which can be considered one of the most complex and challenging forms of intelligence analysis.²² The study involved three university classes at undergraduate and graduate level, and the author reported a positive effect on the student satisfaction and learning performance.

Another study focused on developing the ability to "think interestingly" in students enrolled in classes on homeland security and terrorism as major themes. A game-based learning approach, consisting of probability-based tabletop exercises, was adopted to enhance target skills like critical thinking and problem-solving, agility and adaptability, accessing and analysing information, and curiosity and imagination.²³ The

study reported positive results regarding the learning experience of the students and the improvement of the target skills.

Later studies brought the attention to active learning approaches to enhance the student interaction, including methods like class debates and discussions, group works, role plays, simulations, game playing and problem solving, then identifying the case study approach as the most effective for directing students towards the intended learning outcomes.²⁴ Another contribution addresses active learning methods with specific regard to simulations, exercises, and games, which proved especially useful to let the students apply the acquired knowledge on real-world scenarios.²⁵ In this regard, the literature also reported the positive effect of using books with simulations, exercises and games in intelligence classes, especially to practice structured analytical techniques.²⁶

Overall, the role of gamification in intelligence studies has been marginally addressed and further study on this promising approach is certainly desirable. This is even more important considering that intelligence analysis has a strong practical component (it is often referred to as an “art”), which requires not only acquiring knowledge, but also cultivating the capability to apply this knowledge to real cases. In addition to this, no studies discuss how to use gamification to spread the intelligence culture beyond the community of intelligence scholars, practitioners, and students. The present work fills this gap by proposing a game-based learning approach intended to enhancing the intelligence culture and triggering further interest for the intelligence studies in the general public.

Materials and methods

The boardgame that we introduce in this paper has been named GAMINT, an acronym for “Gamification of Intelligence”. At the state of the art, GAMINT is one of the rare

boardgames (not to say the only one currently available) which was created with the declared purpose of providing a didactic contribution to the teaching of intelligence, with particular reference to Human Intelligence.

An illustrious predecessor created by the CIA was recently declassified and made public.²⁷ However, unlike GAMINT, it focuses on resolving international crises through various intelligence techniques (GEOINT, SIGINT, HUMINT, etc.). It does not focus on the persuasion of individuals through specific methodologies, it does not develop any specific scenarios, it does not create game mechanics that simulate the response of the counter-intelligence services to the activities of foreign agencies, it does not take into due consideration the advantages and opportunities of intelligence analysis.

Other board games such as *Pax Pamir* and *Codenames*, on the other hand, employ some generic elements of intelligence (such as the use of spies and secrets) to support the overall game strategy, but their purpose is mainly playful, and not didactic.²⁸

Theoretical framework

The original concept for the game (February 2021) described in the present paper was based on a classic of espionage and strategy, Kautilya's *Arthashastra*, and focused on one goal: finding the right cover to infiltrate a hostile scenario.

Indeed, the range of covers presented by Kautilya is unparalleled in classic espionage literature. In one of the most well-known passages, the author states: “*The agents could disguise themselves as: ordinary citizens; holy men (including ascetics, pashandas, and their assistants); merchants; doctors; teachers; entertainers (such as brothel keepers, actors, singers, story tellers, acrobats and conjurers); household*

*attendants (cooks, bath attendants, shampooers, bed makers, barbers and waterbearers); caterers (vintners, bakers and sellers of vegetarian and nonvegetarian food); astrologers, soothsayers, readers of omens, intuitionists, reciters of puranas and their attendants; artisans and craftsmen; cowherds and elephant handlers; foresters, hunters, snake catchers and tribals; and even as thieves and robbers. Women agents could adopt the disguises of a nun, a rich widow, an actress, a musician or an expert in love affairs”.*²⁹ Further studies on the use of covers and passports of convenience by security agencies initially helped to create a Non-Official Cover (NOC) simulation.³⁰

Subsequently (March-April 2021), under the direction of the group leader and on the basis of the team's advice on boardgaming dynamics, we also decided to include other basic principles of HUMINT, the ones one can find in Sun Tzu's *The art of war*, namely double game and the forgery of fake intelligence.³¹

Similarly, the most recent theories on agent recruiting, and in particular the MICE and RASCLS models³², were useful to build a game system in which each contact has a specific “vulnerability” that the agent can exploit to his advantage to obtain information or to widen his network. From this point of view, even some classic treatises on espionage that belong to different cultures and historical periods have provided an important contribution to stress the human aspect of intelligence, namely the human relationship between decision-makers, agents and informants.

For the Arab strategist Al-Ansari, for example, the sovereign must show gratitude to the spy even when he fails, ensuring great honors to the agent's family regardless of whether he is on a mission or retired.³³ Similarly, according to Vauban the relationship with the agents must be set up on a collaborative and non-coercive basis, building an authentic relationship of trust;³⁴ according to the sixteenth-century Spanish

diplomat Bernardino de Mendoza, spies must be honored and well paid to ensure their loyalty and prevent double-dealing;³⁵ according to Raimondo Montecuccoli, the relationship between the sovereign and the agent can reach very informal levels, as demonstrated by the case of Count Henry of Berg, who ate and drank with his own spies in order to hear their reports firsthand;³⁶ according to other contemporary authors, “People coerced into espionage rarely make ideal agents”, and “Coercion often creates agents who are angry, resentful, and only willing to do just enough to avoid whatever punishment may await for them”.³⁷

Therefore, GAMINT is based on extensive studies on the history, strategies and methodologies of HUMINT. The reference to the history of HUMINT is particularly important since this specific subject, unlike other branches of intelligence purely based on modern technologies, is as old as the relationships between people. Modern HUMINT has strong similarities with the same kind of HUMINT that the first intelligence services used before the invention of the telegraph, with the one practiced in the most ancient times, and with the one described by Sun Tzu, Kautilya and Jomini in their works about war and strategy. Indeed, the basic principles on double game, information leak, forgery of fake intelligence and the use of official and unofficial covers, have remained the same over the centuries, undergoing conceptualizations and improvements due to the experience of military personnel and intelligence scholars.³⁸

In other words, the main focus of GAMINT is on the manipulation of information by intelligence agencies, on the most efficient methodologies of influence employed by agents (such as ego, ideology, authority, honey traps, money and religion), on the response of the counter-intelligence services to foreign clandestine activities, on the peculiarities of the scenario, which force players to choose the most suitable agents

on the basis of the scenario and the requests of their own agency.

Methodology and architecture of the game

While we are writing this paper (November-December 2021), GAMINT is in the testing phase. Currently, it is made just of forex tiles and playing cards. Each player is called to play a faction out of a total of ten available factions.

To ensure maximum flexibility and expandability, the game does not use real country names and is not set in a well-defined historical period, but the international relations scholars will have no difficulty at understanding the true meaning of an "ominous rogue state", and of an "European Republic lecturing on human rights". Each faction has a goal, and the goal is expressed in terms of information that the agents must transmit to their agency. Four kind of information (political, economic, military, and cultural intelligence) is available in every scenario.

Agencies are represented by an "Intelligence Analyst" dashboard: the more information of different types transmitted to the agency, the greater the chances of winning an "Event Card" before the opponents. Event cards represent the advantage of early acquisition of extensive knowledge in the political, economic, military, and cultural fields. In practice, the event cards can be used against opponents, against the counter-intelligence services of the infiltrated country, or against both. Factions have some "Influence Points" at the beginning of the game. When a faction loses all of its influence points, it is eliminated from the game. Therefore, a player can win a match either by reaching the main goal of his faction or by discrediting his opponents.

In order to gain information, factions use agents in the field, each with his own coverage, abilities and peculiarities. However, as players' clandestine activities increase in the scenario, the alert level of counterintelligence increases. If it touches critical levels, retaliation is automatically activated by the counter-intelligence services: such

retaliation may consist in unmasking the undercover agent, in the loss of influence points for the faction, in the leak of false information to the unmasked faction. The leak of false information is simulated with a pull back of counters on the “Intelligence Analyst” board. Similarly, one faction can exercise double game, propaganda, and leak of forged intelligence against other agencies. Opponents can counter these effects by playing “HUMINT Power-ups” which correspond to Counter-HUMINT tactics and methodologies. The HUMINT Power-ups also serve to train or shield the agent. For example, a "Honey Trap" agent can gain "Ego" skills by using an "Intensive Training in Active Listening and Body Language" card.

Furthermore, to collect intelligence in a proper way, agents must build an intelligence network in the given scenario, as it is the case in real-world situations. To do this, they influence their informants by using one of the following incentives: Money, Honey Trap, Ego, Ideology, Religion, Authority. Lower-level contacts have more "weaknesses" but are slower to provide relevant information. Conversely, higher-level contacts are trained to resist persuasion, but obtain and transmit confidential or Top-Secret information more quickly.

Phases and testing of the project

Dr. Stefano Musco, team leader of the project, conceived the idea of an intelligence-themed boardgame in February 2021. The project team was purportedly selected to reflect different specializations relevant for the intelligence studies:

- 40% of the participants were experts in international relations;
- 30% of the participants were experts in boardgaming;
- 15% of the participants were experts in intelligence history;
- 15% of the participants were experts in intelligence gathering and fusion in the military field.

The team began working on GAMINT in February 2021. To this purpose, the project was divided into three phases: conception, implementation, and testing.

All team members participated in the conception phase (February-March 2021), albeit remotely, due to the pandemic emergency. After an initial brainstorming, each collaborator shared his ideas in a video on the Slack work platform. At a later stage, the most convincing proposal was voted and elected as the working model, and then integrated with the more original elements from the other proposals.

The implementation phase (April-June 2021) was handled by a smaller group of about half of the original team, including the team leader. In July 2021, a first game structure was ready. At that point the team leader and his closest collaborator, Mr. Erik di Trani, created the cards and the board.

The testing phase (October 2021 - December 2021) was designed to be structured both in the process and in the feedback gathered from the participants and can be summarized as follows:

- **Participants.** The testing group that tested the game was composed of 10 students and professionals interested in learning the basics of human intelligence. The testing group was totally independent from the project team.
- **Testing sessions and iterations.** We designed a schedule of 3 test sessions, each composed of 3 subsequent iterations played with 1 week in between of each other. After each iteration, we incrementally gathered feedback from the control group and then adjusted the game at the end of a session (i.e. after 3 iterations).
- **Randomization of the control group.** In order to avoid that the “learning curve” of the participants could affect the evaluation in each round, we divided the broader team in smaller teams of 3 people, randomly selected to avoid as

much as possible that the same participants took part in each 2 subsequent iterations.

- **Free Feedback.** Each iteration followed the principle of “action-reaction” and “counter-reaction”, where the participants were allowed to express their impressions during the game, as well as provide structured feedback the end. The impressions given during the game were noted down by the team leader.
- **Structured Feedback.** At the end of each session (i.e. 3 iterations), the participants were asked to report structured feedback according to a semi-quantitative scale ranging from 0 (minimum) to 5 (maximum) on the following criteria:
 - Ease of learning.
 - Usability of the game.
 - Perceived HUMINT competence.
 - Entertainment.

The testing phase followed a hybrid setting (a blend of in presence and virtual iterations), to comply with the regulatory restrictions and the geographic distance between the members of the testing group. Overall, the testing phases spanned 4 months. Nonetheless, the results of the tests were extremely informative and useful to improve the game towards its final version.

Results, discussion, and next steps

As stated above, the free feedback was noted down by the team leader during each iteration, while the structured feedback was collected at the end of each session (i.e. 3 iterations). The results are summarized as follows.

Results after the 1st session

The weakest criteria after the 1st session turned out to be usability and entertainment, both scoring below average. According to the structured feedback of the participants, in fact, the initial version was excessively heavy. This also had a negative impact on the capacity to learn, thus affecting also the “ease of learning” criterion.

By digging into the free feedback noted by the team leader during the iterations, it turned out that the cards were difficult to understand, and players only became more aware of their usefulness after a few hours of play.

The main action that we took as a consequence of analysis of the results was to reduce the components (cards, board tiles) required to play a session of the boardgame.

Results after the 2nd session

The iterations in the second session used the version of the game improved following the feedback of the 1st session.

Despite the changes, the structured feedback gathered at the end of the session penalized, in particular, the “ease of learning” criterion (which scored, on average, well below the other criteria). The analysis of the free feedback noted by the team player during the iterations shed additional light on the reasons behind this result. Many players, in fact, found the game to be unintuitive because it was necessary to read too many pages of rules and too many details on the single cards. Participants suggested to create a leaner version that could be implemented later with more detailed expansions, cards, and scenarios. In other words, at the end of the second session, we needed to create a simpler and smoother basic version of GAMINT, with reduced components and an easier rulebook.

After this analysis, the team leader took the decision to radically simplify the game. Many cards that had been deemed superfluous were eliminated, other cards were

replaced with checkers and dice, thus significantly reducing the number of components, and other cards were rewritten to ensure a better understanding of their effects. The rules were rewritten so that they could be quicker and easier to read and understand.

Results after the 3rd session

The 3rd session was delayed by several weeks from the 2nd, so to reduce as much as possible the distortion of the learning curve accumulated during the previous rounds. This session used the improved version of the game created after the 2nd session.

The structured feedback gathered at end of the session showed significant improvements across all criteria, including the “ease of learning”. The analysis of the free feedback noted during the iterations revealed that game gained speed in the initial setup (the dashboard could be set up in five to ten minutes, instead of thirty minutes), and players could focus on the game rather than understanding the individual components.

The synthesis of both the free and structured feedback revealed that the game in its final version works well: it reached a good balance between the fluidity of the dynamics and its capacity to deliver a fruitful and entertaining learning experience to the players.

Future steps

In a potential future extension of the game, the personal profile of agents and informants can be refined with: (1) additional psychological and character traits; (2) specific countermeasures adopted by counter-intelligence services; (3) more detailed scenarios offering additional elements of complexity that force players to constantly deal both with the objectives of your their own faction and with the contingencies of the moment. According to Clausewitz’s reflections on uncertainty in conflict³⁹, and

Clausewitz's reviewers who define intelligence as an imperfect tool⁴⁰, unexpected events and margins of opportunity can be added to the game.

With the help of experienced programmers, an online version of GAMINT could also be built (to be played for example in multiplayer on the Steam platform). An online version would have the advantage of implementing the game mechanics on double-dealing, information leak and fake intelligence more effectively, without resorting to tokens and checkers.

Finally, an online version of GAMINT could also reach a wider audience, and tournaments could be set up worldwide. Universities courses on intelligence studies could employ both the basic and the professional versions of GAMINT as a useful tool. The game could be even *modded* and improved by an international community eager to test more advanced versions and to recreate historical and geopolitical scenarios.

Conclusions

This paper presented a game-based approach for learning intelligence, and more specifically HUMINT, by challenging the learners/players to find and adopt the most efficient methodologies of influence commonly followed by agents. Our approach is named GAMINT, acronym for "Gamification of Intelligence", and represents one of the very few examples, if not the only example, of a boardgame purportedly designed for teaching the basics of HUMINT.

We grounded our approach on a solid theoretical framework inspired by intelligence classics, in order to deliver concepts that are general and current enough to address both historical and present scenarios. We then implemented and tested our

approach through subsequent sessions, each made of multiple iterations, which allowed improving the methodology and the rules to achieve a more effective learning outcome.

Based on the results of the tests, the approach discussed in the present paper proved effective to filling some specific gaps and addressing, in particular, the following learning outcomes:

- Teaching fundamental human intelligence concepts. No contributions to date address this specific learning outcome with a game-based approach.
- Design the game to target both skills and knowledge, by enhancing the analytical capabilities of the learners and, at the same time, the knowledge of fundamental HUMINT concepts.
- Invite learners to progress in the intelligence studies using the game as a starting point to drive further interest and engagement.

Future steps might include the creation of an extension/expansion of the game, made possible by its scalability, as well as a digital version that can be played online.

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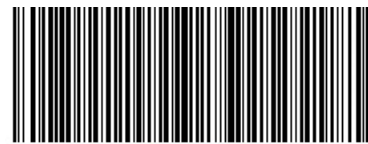
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