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MEMORANDUM

Re: Gamification as a Human-Centered Design Approach to Civic Education
From: Pact Inc
To: Interested parties
Date: September 26, 2018

The USAID/ENGAGE program seeks to develop and utilize innovative methods in programming activities with the goal of *increasing citizen awareness of and engagement in civic activities at the national, regional and local levels*. USAID/ENGAGE's recent programming in FY2018 utilized gamification[1] of education activities in a simulation called *State Building on Mars*. In this simulation game, individuals are divided into ten teams representing different social groups. Their task is to adopt laws and maintain a balance of power on an imaginary colony. During the game, participants learn to consider the interests of different social groups, understand the importance of information and use critical thinking. Such an approach is believed to motivate and engage people to learn from their own experience and experiences of other participants.

The study of gamification in education and adult learning is a new field with little conclusive evidence in the literature. There are numerous theories that postulate how gamification works and its short-term benefits, but there is little evidence of its benefits in the long term, especially in the case of one-time adult simulation games for learning.

At the same time, gamification of education activities has been proven to be effective in the successful circumstances. The successful circumstances tend to occur when the games are highly targeted towards their audience, directed towards a very specific goal, and targeted towards participant behavior almost exclusively.

To help analyze the results and effectiveness of past and future gamified events, below is a memo on recent gamification experience of USAID/ENGAGE program and its partners.

Why games?

Why should education be gamified? Why have businesses, universities, NGOs, and every other kind of social institution turned towards games for educational purposes? The main proponents of gamification argue that games are useful instruments for education as they: "maximize enjoyment and engagement through capturing the interest of learners and inspire them to continue learning".[2]

Theories that promote gamification in education postulate that games create an effective and ideal learning environment for education because they elicit engagement, provide immediate

[1] Gamification will be defined as the application of typical elements of game playing (e.g. point scoring, competition with others, rules of play) to other areas of activity, typically to encourage engagement with a product or service.
[2] Huang, Wendy Hsin-Yuan; Soman, Dilip (10 December 2013). A Practitioner's Guide To Gamification Of Education (PDF) (Report). Research Report Series Behavioural Economics in Action. Rotman School of Management, University of Toronto. Retrieved 14 February 2014.

feedback, give players feelings of accomplishment/failure, and let participants use their imagination. Games give experiences more meaning.

Gamification not only engages people but also brings about learning situations and conditions that builds understanding through immediate and instructive feedback loops. Those loops can be effective as tools for enhancing learning and understanding complex subject matter.[3][4]

In real life, individuals do not feel that they are as good as they are in games. When confronted with obstacles, people may feel depressed, overwhelmed, frustrated or cynical; feelings that are not present in the gaming environment. They also prefer instant gratification to keep themselves engaged and motivated. And this is where gamification steps in.

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Gamification & Serious Games: How It Works

Most scholars divide gamification into two types: *"pure" gamification* and *serious games*[5]. *Gamification* uses the elements of games in non-gaming activities. Any game is a system of rules and elements: badges, awards, levels, ratings, time constraints are typical game elements and they can be used in education.

For instance, the USAID-supported Support to Anti-Corruption Champion Institutions (SACCI) program in Ukraine conducted an activity with elements of "What? Where? When?"—a TV show game for civic activists and students (pictured below).

A team of civil activists discusses the answer

Throughout the game, participants, divided into teams, attempt to answer questions on corruption in Ukraine and anti-corruption activities. For each question, there was a time limit for discussion. The questions required a combination of skills such as logical thinking, intuition, insight, etc. to find the correct answer. Each correct answer added one point to the team and moved them to the top of the tournament table.

The activity aimed to help participants rationally comprehend corruption and increase their awareness. The elements of "What? Where? When?" game made them focus and look for logic and causal relationships in the actions of corrupt officials, with the individuals learning at ease and in the form of a game.

In other words, gamification is a catalyst. The educational process is "catalyzed" by the elements of the game. These elements are of two types: **focusing on players and focusing on the**

[3] K. M. Kapp, The Gamification of Learning and Instruction: Game-based Methods and Strategies for Training and Education, Pfeiffer, 2012.

[4] A. Dominguez, J. S. Navarrete, L. Marcos, L. F. Sanz, C. Pages, J. J. Martinez-Herraiz, Gamifying learning experiences: Practical implications and outcomes, Computer & Education, 63 (2013), 380 - 392. http://dx.doi.org/10.1016/j.compedu.2012.12.020

[5] K. M. Kapp, The Gamification of Learning and Instruction: Game-based Methods and Strategies for Training and Education, Pfeiffer, 2012.

social dimension. The first helps the individuals to concentrate and notice their own progress. These items include points, badges, levels and time constraints. There are social elements to these rating—they help not only to see the individual`s own progress, but also to compare it with the successes of others. Competitive environment makes the individual more focused on information.

Serious games are full-fledged games that have a specific purpose (solving certain problems). Serious games are used not only in education but also in the field of defense, healthcare, etc. The main distinguishing feature of the game is the transfer of the player to the non-educational environment and the complete replacement of the classic learning process on the gaming one. One such game – the State-building on Mars simulation - is developed for civic activists within USAID/ENGAGE program.

For 3-6 hours, players fall into a situation which has no specific reference to reality - the game simulates the Martian colony. Each of the 20 (or 10) teams represents a segment of the population: officials, police, doctors, students, LGBT people, pensioners, civil activists, etc. For a short time, individuals try on another social role, experiencing all the good and bad consequences of it.

The game is divided into rounds. Each round, teams must pass the laws which add or subtract their points. To pass the law, at least four teams must vote for it. It turns out that every round there is a team that wins points and a team that loses points. This problem forces individuals to negotiate and build a long-term development strategy. But in the middle of the game, players are explained that the maximum number of points is not in fact a condition of victory.

Players are looking at how the status of the teams has changed since the last round of voting.

The main concern of the players is to maintain the balance of scores of all segments of the population during the game. Because each of the laws not only adds or subtracts points but also introduces new circumstances to the game. And these circumstances can lead to various consequences, such as propaganda, military dictatorship, oligarchy, etc.

To accompany the process of appearance of new circumstances and logically implement them in the script, the game has one lead and three game-masters. They should be knowledgeable in political science and be erudite to correctly draw historical parallels and to bring the "effect of surprise" into the game.

All this complex mechanism is intended to change the behavior of the individual from the competition at the beginning of the game to the understanding and interaction between the teams at the end.

Engaging in this way also provides opportunities for participants to develop a civic identity as they see and experience themselves as civic leaders.

In addition to the game as a way to keep the attention of the audience, it is worth mentioning the way that can hardly be called a game or gamification, but in essence, they also cope with the task of civic education and engaging people at large public events.

A good example is an **interactive theater**. It does not contain any competitive elements or even a winner, but it gives an istant feedback in the form of a plot change. Viewers do not just watch the performance: they are given the opportunity to choose a path for events to follow. For this, the scriptwriters put the checkpoints in the plot, where the audience must vote for the desired turn of events. The script contains several alternative endings that can lead to reflection. At the same time, the need to make choices encourages viewers to discuss the situation and seek consensus.

Over the past year in Ukraine, the format of interactive theater has often been used by civil society organizations and international donors. These theatrical performances had touched upon issues such as internally displaced persons, economic literacy and anti-corruption.

The closest example is the presentation of an online game about smuggling and corruption at the Customs Office by CASE Ukraine. The presentation of the game was carried out in the form of a theatrical performance, where the four actors played customs officers, talking about their corruptness in an absurd and humorous manner. At the same time, the audience could influence the fate of the characters of the play, advising them on other models of behavior.

Voting console for interactive debate.

Another example is a them**atic interactive debate**. In contrast to the usual panel discussion, each viewer has a remote control, with which they vote for the speaker they like. In fact, it looks like social research in real time. This form of activity was used by USAID/ENGAGE and USAID/SACCI programs during the Anti-Corruption Quest and Debates in December 2017 in Kyiv.

The audience listens to the speaker, evaluating his or her point of view, and depending on how much she likes them, they click "yes" or "no". This data is displayed in real time on the graph. Thus, the participant of the event receives instant feedback about how much their perception is spread in the society. Also, the participant is in a situation where they are compelled to listen to an alternative point of view.

One cannot, of course, fail to mention the online educational projects. The Internet is a place where gamification is already used for commercial projects, but it can be also effectively used by non-profit organizations. For instance, the online project uChoose, which aims to develop critical thinking among citizens, is ultimately aproject focused on electoral decision-making and fights against political populism by explaining Ukrainian legislation and the principles of mass media work.

Despite the positive reception of the above-mentioned tools, we do not believe they can replace a high-quality instruction, an entertaining lecture or a practical task. Rather in the case of gamification, the gamified elements (narratives, points, badges, success etc.) are more specifically targeted to create a positive association with the learning activity.

Educational Games Within the Framework of Human-Centered Design

Human-centered design, also known as “HCD”, is an innovative design methodology that originated in the private sector to better address the needs of end-users. HCD focuses on user

experience, addressing root-cause problems to create customized solution that exactly meet identified needs.

The human-centered design process can be conditionally divided into three phases: the inspiration phase, the ideation phase, and the implementation phase.

The inspiration phase is an intense immersion process: the developers of the solution steps in the lives of end-users (and other relevant stakeholders) to understand their beliefs, motivations, incentives, fears, and passions in order to accurately source and identify problems to solve.

The ideation phase is where the developers translate the data and observations from the end users into specific insights. These insights will guide the developers to brainstorm potential solutions.

The implementation phase is the phase, where the developers take the best of potential solutions and try to bring them to life.

In terms of developing approach, gamification has an almost identical algorithm. It contains a few of the same steps such as understanding the target audience and the context; defining learning objectives; structuring the experience and identifying resources; applying gamification elements.

Let's analyze key HCD insights of gamification on an example of State-building on Mars simulation game. First, we need to answer following questions: Who is the target audience, and what is the context that surrounds the education process? Analysis of the target audience will help us determine factors like age group, learning abilities, current skill-set, etc., analyzing the context can provide us with details of the group size, environment, sequencing of skills, and the time frame.

Since USAID/ENGAGE is a civil society-oriented program, most of the activities carried out for civic activists are aimed at explaining reforms, sharing experiences and building networks. Individuals with an active civic position are adults who are not always motivated or have time to study, especially if this learning activity takes place in the "classical" format of a lecture or conference. And this is not a unique observation. In education, the reasons for drop-outs or low performance include boredom or lack of engagement, a pattern of escalating absenteeism where each absence makes the person less willing to return to school, and most importantly, being distracted by technology such as smartphones and the Internet[6].

At the same time, motivation and engagement are usually considered prerequisites for the completion of a task or encouragement of a specific behavior[7].

Therefore, in general, one of the tasks of USAID/ENGAGE was to create a dynamic and unobtrusive environment for holding large public events and engaging individuals in them. Moreover, these activities should have had an impact on the mindset of the participants of the public event.

Under the "impact on the mindset" we understand the achieving of three types of goals:

- *General goals*, such as the successful construction of balanced state.
- *Specific goals*, such as an understanding of the complexity of the state-building process.
- *Behavioral goals*, such as a concentration of the participant's attention on an important topic and negotiation process.

According to the developer of simulation game, Miroslav Kryzh, the game adds emotion to the non-emotional learning process. The structure of human memory is arranged so that "emotional coloring" helps to record information into long-term memory. Together with the decision-making

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[6],[7] Huang, Wendy Hsin-Yuan; Soman, Dilip (10 December 2013). A Practitioner's Guide To Gamification Of Education (PDF) (Report). Research Report Series Behavioural Economics in Action. Rotman School of Management, University of Toronto. Retrieved 14 February 2014.

process, the gameplay forces the individual to experience new social role without immersion into real circumstances.

This experience, according to the developer, leads to one-time, but long-term changes in the player's mindset. But to confirm or refute this assumption, it is necessary to develop a relevant study that will focus on changing behavior.

The next important stage is the *structuring of experience*.

When designing the game, it is necessary to consider all possible variants of the course of events in it. Because the script and rules are a "path" for an individual who, at the end of the game, must come up with a specific conclusion or behavioral model. Well-defined "pain points"[8] can also prevent the destruction of the game's script.

According to the idea of the simulation game developers, the freedom of interpretation of laws by game-masters helps to direct the game in its process. At the very beginning of the game, players learn the rules and laws. Also, they see a spreadsheet, which displays the status of the teams.

According to this spreadsheet, the more the team gains points, the greater its influence on the gameplay. The team, which collects more than 100 points, can write its own laws, and also can propose the "Super Laws". These two types of laws allow the team to score much more points than when voting for ordinary laws. This game psychologically makes participants ready to contest for team points. According to practice, the first two rounds all teams are trying to pass laws that minimally harm the status of teams. But, as a rule, at this stage the game progress begins to be corrected by game-masters.

To "push" the players to the right scenario of development, game-masters begin to introduce into the game new circumstances that would arise in real life. To do this, they use the context of the adopted laws and the status of social groups.

The process of discussion in teams.

For instance, one of the adopted laws, in its content, significantly expanded the freedom of the media. At the same time, the team of "state officials" is gaining the most points. Both teams conduct successful negotiations and actively participate in the game. At this stage, game-masters make a conclusion about collusion between a team of officials and a team of media and introduce a new circumstance into the game - propaganda. Propaganda can influence the ability to vote for certain types of laws or influence the ability of some teams to vote. The choice of consequences also is entirely up to the game-masters. But, in turn, this can be a "pain point" of the game, because not all participants can understand the logic of game-masters or perceive their authority.

After players understand that points are not the goal of the game, their thinking becomes more complex. They begin to pay attention to the meaning of laws. And this understanding leads to another turn in the plot of the game: the leaders begin to appear among the players.

[8] A pain point is defined as a factor that prevents a student from advancing through the learning program and/or achieving the objectives.

They try to gain control over the situation, performing different roles. Leaders try to interpret the laws in their own way and convince players of their own rightness, and also try to be an intermediary between game masters and teams. The emergence of a leader is a twofold situation. The leader can both destructively influence the game and unite teams for a specific purpose. To legalize the leader, in the middle of the game, the prime minister's elections are held. Each team has the right to delegate one candidate who tells the other participants about himself and presents his "electoral program".

The Prime Minister has a special mandate: it is an opportunity to add and subtract points at his discretion and put to the vote super-laws. Thus, another democratic mechanism is introduced into the game and an important issue of trust to the state institutions is raised. After all, the player who becomes the prime minister is a represenative of a particular team, and he therefore becomes an object of criticism for other teams.

Candidates for the post of Prime Minister are presenting their programs.

After passing through this stage of the game, players become the participants in a full-fledged political process. Players go from simple communities to a complex state system in just a few hours, instead of many years, as it happens in real life. This "compressed" experience becomes a starting point for changes in participant`s mindset.

To understand how the decision in the form of simulation games is implemented, a session of reflection is held at its end. In the terms of human-centered design, this is the closest thing to prototyping and testing. Participants share their observations, answer questions and receive questionnaires. First of all, after the game, players seek a parallel with reality and discuss what happened during these several hours. Many of their findings reveal the key insights of interaction between the state and civil society, and this often becomes the basis for discussing current pressing problems. Also, each session of reflection becomes a justified point for finalizing the game.

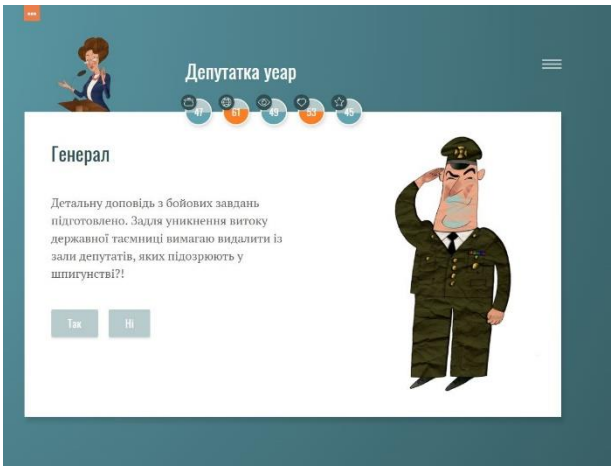
According to the survey of participants, two main learning points can be made about the simulation game as a way to engage visitors of large educational events. First: almost a quarter of the participants do not always fully understand the interpretation of events by game masters. This can sometimes lead to demotivation of players and loss of interest. Second, and the main comment: **90% of participants are ready to advise their friends, relatives, and colleagues to participate in such a game.** Thus, the game developers' assumption is confirmed that the mere fact of the simulation game during the educational event makes it more popular among potential participants.

Reframing of Gamification

One of the main "pain points" of gamification is that the game scenario can be destroyed if only one circumstance is changed, such as the age of the audience, their education or social status.

The State-building on Mars simulation-game was tested in different circumstances: USAID/ENGAGE held a game for groups of 30, 100 or 200 people, for older groups, for civic activists, for teenagers, and for a wide audience. The experience of these games shows that such an approach to civic education has no significant drawbacks, but at the same time, carrying out simulation games requires larger resource costs than any table game. The game requires a venue, professional facilitator, experienced and authoritative game-masters, as well as technology and technical team. The highly interactive and adaptive nature of State-building on Mars makes it difficult to reframe the game into online or the board format.

Still, the ability to play online is the key to high audience reach. For instance, take the Ukrainian Crisis Media Centre`s (UCMC) project - uChoose platform - and their educational quests. On the uChoose web-page, there is an online quest that suggests trying to make decisions instead of the president, parliamentarian, prime minister or governor. After choosing a character, the player is given several metrics: budget, international reputation, legality, electoral rating, national security. The game offers a situation in which the player must decide "yes" or "no". After choosing a character, the player is given several metrics: budget, international reputation, legality, electoral rating, national security. The game offers a situation in which the player must decide "yes" or "no". These situations are sometimes an allusion to real situations when a politician needs to make a choice between electoral reputation and legality, having made an unpopular decision.



uChoose online quest

Each player's decision affects the metrics given at the beginning and leads to re-election or political fiasco. Answering questions during the game, the player learns the actual mandate of these characters, become versed in Ukrainian legislation, learns to identify populism and critically refers to the media.

According to the project's editor-in-chief, Olesya Drashkaba, the quest managed to reach 150,000 Internet users. The average time for passing the game was 7 minutes. That eventually helped to attract more than 100,000readers to the site, where analytical materials on critical thinking, elections and media literacy were published.

Conclusion

In a traditional learning environment, an individual’s motivation to learn effectively can be hindered due to several reasons. However, with the successful application of suitable gamification techniques, the delivery of the information can transform a simple or mundane task into an engaging learning process for the students.

While the underlying objective of applying gamification to any education program is to prompt some type of behavioral change in the student, many instructors specifically look to first tackle the issue of individual motivation and engagement during their learning process.

Though it is not easy to successfully implement gamification in education, a mindful approach using the human-centered design algorithm, can increase the probability of creating an effective education gamification strategy. It is also recommended that instructors remember that gamifying education may require long periods of fine-tuning and most definitely should not replace the original value of human teaching. **Gamification in education can be a powerful strategy when implemented properly, as it can enhance an education program, and achieve learning objectives by highly engaging tools.**

Given the current gaps in the literature and observations on the long-term efficacy of gamification approaches on behavior change, USAID/ENGAGE has a unique opportunity to pursue innovative research that analyzes gamified learning-events for civil society development and advocacy purposes. A thorough analysis of USAID/ENGAGE's gamification events would provide a significant contribution to the international development community literature on how gamification leads to long-term civil society growth and advocacy promotion.