



The Creative Problem Solving Process

Global Issues Problem Solving (GIPS) is based on the Creative Problem Solving (CPS) Process, a powerful process that can be applied to many complex situations in education, business, community, and personal settings.

The following includes the Future Scene on the topic of Gamification and high quality senior division student work, completed in a 2 hour competitive setting. This work features the Creative Problem Solving process outlined below.

Step 1. Identify Challenges (16/team; 8/individual)

- Generate issues, concerns, and problems, applying background knowledge to the Future Scene.
- Consider major issues and categories of problems in order to flexibly identify Challenges (*see: FPS Category List*).
- Select the best Challenges.
- Write the Challenges clearly and concisely, showing cause and effect and tying logically to the Future Scene.

Step 2. Select an Underlying Problem (UP)

- Consider the major issues in the Challenges.
- Select an issue that will have a major impact on the Future Scene as the emphasis of the Underlying Problem (UP).
- Be forward-looking and proactive, not regressive and reactive, in developing the UP.
- Write the UP in correct format, starting with the Future Scene conditions that are the basis or rationale for the idea.
- Indicate a desired action to be taken (Key Verb Phrase), purpose for the action (Purpose), and parameters (topic/place/time) tying the problem to the Future Scene.

Step 3. Produce Solution Ideas (16/team; 8/individual)

- Generate multiple Solutions to the Underlying Problem using flexible thinking (*see: FPS Category List*).
- Think futuristically and consider the impact of technological advances.
- Focus in on the best Solution ideas, checking that each idea addresses the UP.
- Write the Solutions clearly.
- Elaborate by telling who will implement the Solution, what action will be taken, and how or why the action will be taken.

Step 4. Generate & Select Criteria

- Considering the UP and the Future Scene, generate Criteria to evaluate the Solutions.
- Select five important Criteria to be written in question format.
- Write Criteria using the superlative form, one dimension, and the desired direction.

Step 5. Apply Criteria (8/team; 5/individual)

- Select the most promising Solutions and enter in the grid.
- Rank the Solutions based on each of the Criteria separately.
- Identify the best Solution (highest number of total points).

Step 6. Develop an Action Plan

- Plan how the best Solution can be implemented.
- Describe the actions and steps of the plan.
- Explain why the plan fulfills the Criteria.
- State how the plan will address the Underlying Problem and impact the Future Scene.

“W-Wa-Wak-Wake Up Sleepy Head! It’s 3 am Sunday 11, March 2043.” I roll over, and as my eyes focus, virtual images of a bright sunrise peep over the blue shadows of the mountains outside the confines of our tiny home. “At 2:33 am, you were surpassed on the leaderboard, due to your 4 hours of recorded inactivity. Four hours of inactivity are too much if you want to be promoted,” warned my personal augmented reality (AR) device. “You need to work on your presentation about improving Everest Enterprise’s gamification model. Remember, this presentation is one of your project leadership goals for this month. Being a good leader will increase your chances of being crowned. Would you like to message the current leader?”

I sigh and open the screen with a blink. When Everest Enterprises hired me, I opted for an AR implant so that my status points, called Aspire Points, could be automatically uploaded into the cloud. I even earned 30,000 Aspire Points for choosing the implant. I wonder if I made a mistake. I shake my head - better not think that. Everest Enterprises reminds us every day that it helps customers and staff to be their best selves through interactive technology.

Everest Enterprises is a leader in the development and implementation of gamification practices. Its mission is to integrate motivational and engagement strategies into all aspects of society. My dad worked for Everest Enterprises when the company first opened in 2022. When my dad retired from Everest, he ensured my position with his Aspire Points. Now he brags about me - “Frank, the future of Everest Enterprises” - on *Retiree World*, the latest social platform for retired professionals.

Parents attempt to amass Aspire Points to bid for openings in Everest Charter Schools. Doing so requires that they agree for their children to be educated using only Everest’s Educational Platform. Students earn L-badges (learning badges) for success when completing learning at each level. If students fail to meet their quota of L-badges, they may be ineligible to enroll for the next semester. Luckily, in my position as a Game Development Consultant, I have earned enough Aspire Points to secure my daughter Leda’s spot in the premier preschool. Now she must do her part in accumulating enough badges to maintain her enrollment status. My family agreed that she could be implanted with Everest’s e-learning chip to improve her chances of success.

My wife, Ellen, is a psychologist for Everest’s Gaming Motivation Division. Suddenly, her avatar appears in my peripheral vision, “I want to make Leda a candidate for a research project in my division. Have you noticed that she doesn’t really seem focused on her incentives? She just let her homework alarm ring last night! None of the badges or warnings seem to matter to her. If she wants to earn Aspire Points for herself and for us, I really need to study her - she needs seven more L-badges to stay in her school. I’m worried, but I think my team can help.” Ellen disappears from my view, and I snap back to reality, hoping that I didn’t lose any more Aspire Points for inactivity.

I slap on my 35-hour energy patch and resolve to develop new strategies. Drawing inspiration from my own family, I realize I want to pursue a model of gamification to increase productivity and enhance family relationships. My AR implant notes “you are back on track” and my Aspire Point total zooms upward - almost reclaiming the top spot.

We have the world’s best problem solvers as consultants, and I transmit the following message to them. *I am working on a family-oriented gamification plan. Let’s work together to consider possible challenges of the effect of Everest Enterprises’ gamification strategies on the family. Choose an Underlying Problem, and develop an Action Plan to address a significant area of concern.*

STEP 1. Identify Challenges (ind)

Read the Future Scene carefully and generate ideas for challenges, concerns, and possible related problems. Choose the 8 most important challenges and write them in the space provided.

Employees of Everest Enterprises are trying to push their bodies to the limits by working early (3am) and for extended periods of time (with a 35-hour energy patch). Gamification technologies also adapt to make themselves more addictive to users. The combination of these factors could result in negative impacts to the physical health of users of gamification.

Many adults and children are strongly encouraged to use personal AR devices to manage their daily lives. This may cause them to become dependent on AI's, reducing their ability to plan and work for themselves.

More and more people are using AR implants, which collect a lot of data about the activities of these people and stores the data in the cloud. If this data gets breached, a lot of personal and confidential information could be at risk.

To bid for openings in Everest Charter Schools, parents need to agree for their children to be educated using Everest's Education Platform. Since people are punished for not following the Everest standard, Everest may gain a virtual monopoly on education. This could negatively impact the quality of children's education in the long run.

Many of the ways to earn "Aspire Points" may rely on the purchase of expensive equipment, such as augmented reality devices and implants. This may make it harder for low-income people to earn Aspire Points and advance in society, accelerating the socioeconomic divide.

Gamification has encouraged people like Frank to "not think" about whether choosing it was a mistake. This can lead people into a cycle of propaganda, in which they neglect to consider the negative parts of a system. This could lead to greater corporate control of the lives of Everest customers and a reduction in free will, which is a great ethical issue.

According to Frank, gamification has led to a decrease in the ability of families to have meaningful relationships. An increased reliance on technology in the future could make it even more difficult for people to build meaningful social relationships on their own.

Research has shown that longer periods of rest and vacation can improve productivity, while increased pressure to work for long periods of time can reduce productivity and retention of learning. Since Everest's gamification practices encourage people to work longer than they should, their productivity may end up decreasing in the long run, which could negatively impact businesses.

STEP 2. Identify the Underlying Problem

Using the challenges listed in Step 1, identify a problem of major importance to the Future Scene situation. Write your Underlying Problem making sure your question clearly explains the action that will be taken and the desired results/goal of that action.

Because the focus on amassing Aspire Points has led families to become reliant on gamification for assessing their self-worth, in what ways might we increase the independence of people from short-term external rewards so that Everest Enterprises' gamification can constructively stimulate progress from 2043 onward?

STEP 3. Develop Solutions (ind)

Generate solution ideas to the Underlying Problem in Step 2. Choose the 8 most effective solutions and write the elaborated ideas in the space provided.

1 Everest Enterprises will create Self-Assess. Self-Assess will be an Augmented Reality assistant that lets users choose their own goals for how they earn points rather than rely on external rewards. This increases the ability of people to make their own decisions, while still allowing Everest's gamification platform to encourage people to pursue progress.
2 Everest Charter Schools teachers will create a curriculum called LearnGamification. LearnGamification will be a mandatory course in teaching young students how to motivate themselves to achieve tough goals without strictly relying on Aspire Points This will decrease their dependence on Everest's gamification strategies.
3 OSHA will create a new set of standards concerning the use of gamification in businesses and schools. These standards will restrict the amount of psychological pressure that companies can put on people through gamification goals. Doing this will make people have to determine their own path for some achievements on their own without needing external rewards, and will allow for healthy gamification strategies.
4 Engineers will create PlanGame, an AR app people can use to moderate the time they can spend using gamification systems. This can reduce the amount of obsession involved with gamification and require people to plan for themselves during their downtime from gamifiers.
5 Biologists will launch NeuroSearch, a project to identify the neurological factors that result in addiction to gamification technologies. They will use the information they gather to create new solutions for combating reliance on gamification, thus allowing people to reap the benefits of Everest's gamification while maintaining their independence.
6 Doctors will create a new physical fitness test called GameEval. GameEval will be similar to annual physical exams in that it will be universally mandated. It will feature psychological questions that test the ability of people to function independently of their gamified assistants. People who fail the test will be prohibited from using gamified assistants and will receive help in regaining their abilities. GameEval will help mitigate risks of reliance on systems like Aspire Points.
7 Businesses will create WorkFree, a program in which employees not using gamification can receive benefits for achieving the same productivity as employees using Everest's gamification model. This will increase the number of people who strive to work hard without the encouragement of a personal assistant, while maintaining the ability to use benefits to stimulate self-improvement.
8 Everest Enterprises will create a division called the Once-a-Day Feedback. Once-a-Day Feedback will involve a product that tracks a user throughout a 24-hour period using AR implants and then has a conversation with the user regarding ways to improve. Rather than being assessed every minute of the day, users score Aspire Points based on how they do at the end of a long period, making them have to determine how best to accomplish their tasks on their own.

STEP 4. Generate Criteria

Generate criteria to determine which solution idea does the best job of solving the Underlying Problem and/or addressing the Future Scene situation. Select the 5 most important criteria for measuring solution ideas and write them in the spaces provided.

1	Which solution best increases people's independence from short-term external rewards?
2	Which solution best allows Everest Enterprises' gamification strategies to constructively stimulate progress?
3	Because gamification technologies can result in physiological addiction which affects young people the most, which solution would appeal the most to children?
4	Because Everest Enterprises exerts monopolistic control over society, which solution best reduces the extent of their control?
5	Which solution best accomplishes Everest's long-term goal of enabling customers and staff to be their best selves through interactive technology?

STEP 5. Apply Criteria to Solutions

From the solution ideas written in Step 3, select the 5 ideas with the most potential to solve the Underlying Problem and list them on the grid. Use each criterion to rank the solutions on a scale from 1 (poorest) to 5 (best). The numerical ranking for one important criterion may be doubled.

Rank solutions.

#	Solution						Criteria
		1	2	3	4	5	Total
	Everest Enterprises will create Self-Assess. Self-Assess will be an Augmented Reality assistant that lets users choose their own goals for how they earn points rather than rely on external rewards. This increases the ability of people to make their own decisions, while still allowing Everest's gamification platform to encourage people to pursue progress.	4	5	1	3	5	18
2	OSHA will create a new set of standards concerning the use of gamification in businesses and schools. These standards will restrict the amount of psychological pressure that companies can put on people through gamification goals. Doing this will make people have to determine their own path for some achievements on their own without needing external rewards, and will allow for healthy gamification strategies.	3	2	2	5	2	14
3	Engineers will create PlanGame, an AR app people can use to moderate the time they can spend using gamification systems. This can reduce the amount of obsession involved with gamification and require people to plan for themselves during their downtime from gamifiers.	2	4	3	4	1	14
4	Everest Enterprises will create a division called the Once-a-Day Feedback. Once-a-Day Feedback will involve a product that tracks a user throughout a 24-hour period using AR implants and then has a conversation with the user regarding ways to improve. Rather than being assessed every minute of the day, users score Aspire Points based on how they do at the end of a long period, making them have to determine how best to accomplish their tasks on their own.	1	3	4	2	3	13

5	<p>Everest Charter Schools teachers will create a curriculum called LearnGamification. LearnGamification will be a mandatory course in teaching young students how to motivate themselves to achieve tough goals without strictly relying on Aspire Points This will decrease their dependence on Everest's gamification strategies.</p>	5 1 5 1 4	16

STEP 6. Develop Action Plan

Develop your top-scoring solution idea into an Action Plan. Thoroughly explain how the Underlying Problem is solved, how the plan will be implemented, and how the Future Scene will be affected.

Everest Enterprises will create Self-Assess, an augmented reality assistant that lets users choose their own goals for how they earn points rather than rely on external rewards. Self-Assess will be entirely voluntary; users will be able to choose their own goals or search for other goals made by the Self-Assess community. Goals might start small with things like "focus on homework for thirty minutes" or "go to bed before midnight", but might culminate in more long-term goals like "finish creating a class presentation in the next three days." An AI will determine reasonable Aspire Points values based on these goals, and will automatically add them to the user's Aspire Points once these goals are completed.

This solution retains many of the benefits of Everest's gamification platform, including its ability to compete with others for progress. However, it will solve one of the key concerns with the Everest platform: that people are becoming more reliant on asking a virtual assistant for advice on what to work on. With Self-Assess, people now have to take the role of planning their future, and they will be in charge of making their own decisions. Families will like this solution because it is the best way for children to develop in a gamified world.

Self-Assess will be created by the developers of the Everest AR devices. An experimental platform will be created by psychologists like Ellen in the Gaming Motivation Division to test the efficacy of the solution before it is rolled out to the general public. Finally, it will be released in 2044. Self-Assess will eventually replace the more invasive AR technology; people who already have implants will be able to download the software to their implants.

The people in the Everest-dominated society will become better at setting their own goals as a result of using Self-Assess. They will become more independent and be able to regain human qualities like social relationships that Everest has taken away. Creating a less invasive and more inclusive technology like Self-Assess is the best step forward for a family-oriented gamification plan.