

GAME SOLVERS

Using games and virtual worlds to hack solutions for complex problems and gain employment opportunities

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“I like video games, but they're really violent. I'd like to play a video game where you help the people who were shot in all the other games. It'd be called 'Really Busy Hospital” - Demetri Martin

Games are fun to see, hear and feel. We all love to go into our own fantasy worlds to create a reality. Our minds are super powerful systems processing at least 40 thoughts per minute. How about we use these precious power-ups to solve problems using the games? The fun element is relative and not everyone enjoy games, but when fun can be correlated with our daily lives, we can do so much to solve more complex problems and provide solutions to unanswered questions and gain desired employment based on the work experience gained while problem solving uncertainties in games using feasibility, desirability and deliverability in achieving goals. This article explains the need for games and virtual worlds, motivation to do work, answer complex problems while playing and all the work experience gained during the play, convert to employment opportunities for organizations and create impact in complex problem solving.

I. INTRODUCTION

According to a research conducted by Entertainment Software Association (esa), 62% of the gamers play games with other players connected in game network, 34% play board games, card games, puzzles, 26% play sports, strategy, role-playing and 19% play casual, social games. These statistics help in understanding the various materials

and methods involved in the game market. A combination of serious, casual and educational games may help gain the know-how, practice problem solving and even have fun with sleepless nights. Players are continually hooked to play games at an average of 3 billion hours per week as a planet on the whole. On the other hand, innovative businesses are working smart to

ease lives and propose solutions to even the unidentified problems. But we all know that most of the discoveries and inventions happen without notice and can these game players solve complex world problems as challenges?

I. THE TEN INGREDIENTS IN GAMIFICATION

Byron Reeves and J. Lighten Read, authors of the book *Total Engagement* has included case stories of an individual's wanting to play after, during their working hours. They mention about ten ingredients that go into making the game-like-environment at workplace. Creating virtual worlds will help the player (who is actually an employee/job seeker in our case) to skill based experience, leadership, imagination, community identity, power, frivolity, enjoyment, psychological flow, and emotional experience. The most important of all is the psychological flow in coming across challenges in a game. The authors mention about the nine features of flow that contribute to the sense of enjoyment.

1. Self-representation of Avatars

Average age of players is 30 years who are mostly working professionals or women who stay at home. Gamification is used to help players to improve their work skills, lose weight, progress in setting goals etc. Avatars help is visualizing self in virtual worlds. They induce a self-motivation and relinquish the player's imaginative mind.

Game Play: Players visualize themselves in the problem which is faced by others.

2. Three-dimensional Environments

We touch things and feel them using our sense organs. The three-dimensional (3D) environments will help ease the sensitivity to savor the various features. A 2D or a 2.5D will be interesting too.

Game Play: An environment that helps define the problem in the form interactions and design.

3. Narrative Context

Storytelling helps us to explain our idea, events and situations. They bring in the interesting hold to various topics of discussion with information. In the gaming world, storytelling has been used widely by game designers. A background history can help in defining the actual challenge to be solved by the players.

Game Play: Introduction and definition of the game's problem statement or goal.

4. Feedback

As and when the players progress, automated feedback help in improvement and act as hints. The challenge can be solved efficiently with the best available resources.

Game Play: Analysis and reciprocation to the solutions proposed is made easy and helps user to progress.

5. Reputations, Ranks and Levels

Balancing competition and cooperation levels are important when we are working in teams while

comparing our work done to other players brings a sense of winning and introduced the player to complex problem solving and challenges to be solved.

Game Play: An achievement is recorded by the promotions and induces both intrinsic and extrinsic motivation in the player.

6. Marketplace and Economies

With the growing population of more than 7 Billion people, we are able to visualize developed, developing and underdeveloped economies in the world. The more we engage people the more problem solving growth, we can expect in posterity. An important fact to consider here is with telecommunication and internet as the major media. Introducing “toll free games” voice over game thinking can be an effective resource to close the global engagement gap.

Game Play: Unemployment is one of the major reasons for the decline in the growth of economies. By hacking solutions from minds can help players gain experience to follow their interests in the field. Secondly, employers can hire the right candidate for performing job roles.

7. Competition Under Rules that are Explicit and Enforced

The rules of the game are simply to complete the given tasks in a given time inducing a sense of competition with other players. This competition leads to thrilling and sometimes speed which most of them enjoy.

Game Play: Competition for the best solutions can lead to the best outcomes on providing many solutions for a problem.

8. Teams

Collaboration across networks, sharing the marketplace and environments can help in utilizing limited resources and generate most efforts as the teams leading to a winning solution.

Game Play: Teaming with like and unlike minded people across networks will lead to innovation and collaboration.

9. Parallel Communication Systems that can be Easily Reconfigured

The software/hardware or any other gaming platform that the game is built on can be supported as and when the rigorous problem solving takes place along with other interactions or distractions in the arena.

Game Play: Players need to handle exceptions, multi-tasking, communication of the requirements and finally be able to reconfigure the domain simultaneously.

10. Time Pressure

Time is a rolling ball. It simply does not wait for us to think, re-think and implement. The knack of being ambidextrous in problem solving will be handled well as and when the game is played. The various skills can be picked during this phase of intervals of experience.

Game Play: Time is the only ingredient that does not wait or cannot be changed when compared to other players when the game is taken as a whole. There will be changes in the configurations and adaptation is the key.

II. LIGHTWEIGHT EXPERIMENTS

1. At Middle School Level

Role-playing games credits the players for leadership taken in solving problems, helping to boost players' energy levels to participate in more problem solving games.

Experiment#1: Cube design– a geometric 3D cube to be built using newspapers and glue.

Ages: 10-15 years

No. Of Participants: 15

Observation#1: One of the students made paper-glue, sticky tapes to stick the sides of the paper from inside instead of sticking the sides from the outside. Everyone else followed his idea and made paper-glue, sticky tapes to stick from the inside.

Inference#1: Leaders need to be rewarded, but followers need to be appreciated too for learning from others and solving the given problem.

2. At Middle and High School Level

Experience based mapping introduces players to the new environment in which they experience a déjà vu.

Experiment#2: Experiential mapping- Students were given four different colors of sticky notes to draw and write about their future goals in each of them, keeping each note as one phase or year, compared to various levels in their lives.

Ages: 13- 17 years

No. Of Participants: 17

Obsevation#1: Drawing is fun, but not always. Mostly the girls loved to draw and were more expressive when compared to the boys. The boys made minimal drawings just to explain artifacts like maps, basketball, representation of their fantasy etc. Whereas the girls took some time in explaining every moment on their faces in life by drawing on experience within another one. Some of them did not use all the sticky notes given to them. Some used just one to stay focused.

Inference#1: In various age groups and genders, games can be influential and a successful game will be able to impress both the genders and handle various age groups and relate to the experience of the players considering various geographical locations too.

3. At workplaces, public places

Adults are interested in tangible benefits from a game. They also look for speed, thrill, stress relief, visualize themselves in the virtual world, but they are all not hooked to the games all the time. Games induce fun and gamification, when designed

using the 6Ds by Professor Kevin Werbach the outcomes are much more.

The 6Ds design framework for Gamification of the game for hacking solutions for complex problems and thus creating pathways for employment opportunities are:

1. Define the business objectives:

Complex problem solving using gamification principles in a game to achieve solution proposals for complex problems that are expressed in the form of a game to finally create work experience based employment opportunities for job seekers.

2. Delineate target behaviors:

Youth, especially after graduation are seeking for jobs in developed and developing countries. Whereas youth in some developing and underdeveloped countries are not always accessible to employment opportunities due to lack of various resources. It would be beneficial for the game to attract youth who are interested in games that have high speed, critical thinking and the SMART goals (Specific, Measurable, Achievable, Relevant and Time) but with some uncertainties to encounter the level of difficulty.

3. Describe your players:

The players are geographically located in all the 6 continents of the world. They are constantly

looking for opportunities to follow their passion and work for a livelihood. They are accessible to advanced technologies like smart phones or computers and have minimum English language skills. Specific age group is 13 years & above for problem solving and 13 years and below of age involve themselves in engaging games that induce learning.

4. Devise activity loops:

Engagement loops: A network or individual player interfaces with various problems to solve keeping the ten ingredients of the gamification design in the virtual world (games)

Progression Loops: As and when the players propose solutions using various skill sets, the progression bar indicates the level of difficulty. The analysis and constant evaluation help the players to think laterally to progress amid the uncertainty.

5. Don't forget the fun:

Everyone has different definitions for fun and fun can be customized with various options developed after a survey of millions of players. Speed, networking, specific challenges, feeling of leadership etc. Are defined as fun in this context.

6. Deploy the appropriate tools:

Technological interface with the set targets understanding the

cognitive levels can be the right deployment tool and can be analyzed based on a series of experiments conducted by a team of marketing and analysis group.

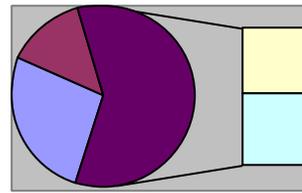
Real experiments: Series of interviews were conducted in shopping malls, theatres, workplaces and community gatherings at two major geographical locations, namely, USA and India and were asked to tick the following that applies to them during the play:

1. Games for fun
2. Games for benefits
3. Games for gifts
4. Games for networking

Total No. Of Participants: 150

Age group	Participants
18- 25	48
26-30	47
31 and above	55

The results showed that the majority of them ticked Games for gifts and networking.



Key Observations	Inferences
Fun is relative	Fun can be of different types and is based on emotions
They look for tangible benefits	Coupons, Sale, Advertisements or Monetary benefits
Gifts are unexpected	Gifts help in bringing motivation as a source of encouragement
Social networks and meetings will get the players know people	The more people we know, the more we do things better

III. METHODOLOGY

The right mix of games and gamification principles invest in the ideas for new business model generations. The methodology used to implement the research in by participating in various challenges and recording community responses while creating experiments.

1. Problems are not simple:

A game that helps read problems, answer complex problems using

design-game thinking and helps gain skills necessary for employment. – This research phase model looks at various aspects of implementing the ways of solving complex problems.

In the year 2030, 3.5 Billion is the projected global labor force, up from 2.9 billion today. 40 million potential shortage of college-educated workers in 2020. 30 years from now there will be more jobs created, but are there skills that can match the job requirements?

Perhaps, the virtual worlds can interact with the players to match their skills, education levels, life experiences to solve a problem. This situation can be best analyzed by the example: Some of the African countries do not have access to drinking water and when the situation is explained in a virtual world using game design, the person who plays the game will be able to analyze the problem and support the situation in solving the problem using sustainable tools with the know-how that is co-created in the game. Thus, analyzing the problem statement in terms of the entire virtual reality will help induce solutions to problems that are still major problems for decades despite the growth in sustainability in developed countries. The vision can hope for peace between countries and help live better lives.

2. Employment Opportunities

Bird's eye-view of the Employer's perspective. The following explains the analogies for the game and the need.

1. The collaboration Consumption market can be created using the game arena that is involved in constant problem solving which is tabulating work experience of the person playing.
2. Levels: Facing complex problems means to gain in-depth experience w.r.t achieving progression in the game.
3. Tangible rewards as salaries: Small amounts, coupons, gift cards, job recommendations are the tangible benefits that one can get in return for solving problems. Also volunteering activities can be conducted using the platform for solving global challenges.
4. Employers look for a unique selling proposition (USP) in a job seeker irrespective of the education or work experience. The USP delivers a valuable now-how for the job seekers who are willing to solve the problems with basic access to computers and English language.
5. While the various levels of problem solving take place, employers gain access to various features that is inscribed in the arena about the individual/team player/s to access the jobs specification match with the

series of problems that the person is interested to solve.

3. Using Tim Brown's "Change by Design", one can implement the following key takeaways while using the gaming field:

1. Storytelling: A unique or experience based storytelling will help job seekers to better understand the actual problems to be solved at organizations or direct problem solving in evaluating living expenses for an entrepreneur.
2. Design principles: IDEO is constantly working towards impactful projects rather than focusing on growth. OpenIdeo is an eye catching platform for one to develop design strategies. The various how's, why's can be answered with the help of like-minded people who are hacking the solutions for complex problems in the world and beyond. Creativity enables new ideas and the fear of failure with being simply a train round so that individuals can seek guidance to progress.

IV. UNCERTAINTY IN GAMES

Playful series by Greg Costikyan, in his book, "Uncertainty in Games" explains about "animated spreadsheet" meaning player-skill games, are inherently superior to character-skill games, or two games of analytic complexity. He also mentions about having a scheme to match players by experience, for

example. But designing such a system is tricky, and none is perfect. Some players may find the game too easy or too hard. A game that can be co-created using the game developer's tools, creating fun, unpredictability like in the *Monopoly*, hidden information that contains various problems to solve in the infinite game arena. Combining different sources of uncertainty, or injecting a novel source of uncertainty into an otherwise well-understood genre, can create highly original games and should be one of the tools in any intelligent designer's toolbox.

V. CONCLUSION

Games are uncertain, and must be so to remain interesting; but sources of uncertainty are manifold, says Greg Costikyan. Using the right developer's toolbox the design of the game can be created for players to solve problems defined as games to simply create work experience, timeline of problem solving, data, report solution proposals to organizations and bring greater impact in terms of solutions to uncertain problems and gain economic sustainability by entering organizations who are striving to solve the same problems.

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