

The Use of Structured Goal Setting in Simulation Design

Stephen R. Balzac
7 Steps Ahead, LLC

Games are written for different purposes: LARPs to entertain, Serious Games to inform and educate, and simulations as training tools or to discover how people might respond to different situations. No matter the reason, they all need to keep the participants actively involved and interested in the scenario. A failure to maintain interest means that the simulation or game fails in its purpose. Structured goal setting, as described in Locke & Latham (2002), is proposed as a technique for maintaining player focus and interest, and for putting the plot into the hands of the players. Relevant research is reviewed, and application within a variety of games is discussed. Suggested methods of applying goal setting to simulation design are provided.

Games are written for a variety of purposes. Most LARPs are for entertainment; Serious Games are written to “inform and educate,” as well as entertain. Simulations are run to discover how people might react in a situation or to train participants in appropriate behaviors. For the sake of this discussion, the terms, “simulation,” “game,” and “serious game,” are used interchangeably.

A key element of any simulation, whether done as a LARP for entertainment, or as a serious game, is keeping the participants acting within the game. That is, participants need to suspend disbelief and act within the parameters and world of the simulated environment, not outside it. When the participants move outside the constructed world, they start to see the figurative plasterboard and duct tape holding the game together; this acts to destroy disbelief and undermine the game.

Related to this problem is that of keeping the participants focused on accomplishing their objectives within the simulation. The strength of a well-designed game is that it keeps the players actively involved with one another and with the fictional world of the game. When players lose interest in their objectives, they are likely to become bored, disruptive, or even leave the

game. As the number of participants falls off, the consensual reality of the game is slowly unraveled. Boredom can, in other words, become a contagion that undermines and destroys the game for everyone.

A final related problem is that games need to be resilient: if a key player does not show up, leaves early for some unexpected reason (e.g. illness), or is eliminated in the course of play, the game needs to continue on. The remaining players need to be sufficiently invested in their objectives to continue to pursue those objectives, to be motivated to develop creative solutions, and to devise unexpected ways of looking at the problem.

In addition to all these needs, for a game to be successful, the participants need to have fun. In a game written purely for entertainment, this is obvious. However, it is just as true in a serious game or educational game. In both those scenarios, if the participants are not enjoying the experience, they will not focus on it, and the lessons they are supposed to learn will be lost.

So the big question at this point is: is there a mechanism or game mechanic that will satisfy all these needs, and also be easy to use and easy for the GameMasters to implement. Optimally, the solution should be transparent to the players, require no special rules or complex mechanics, and little or no run-time intervention.

Correspondence regarding this article should be addressed Stephen R. Balzac, 7 Steps Ahead, LLC, 30 Carriage Lane, Stow MA 01775. Email may be sent to steve@7stepsahead.com

Fortunately, there is a simple means of meeting all of the above constraints: based on the personal experience of the author and a study of the psychological research, it appears that structured goal setting, when properly applied, is the best tool for the job.

Reviewing Relevant Research

Structured goal setting, described in Locke & Latham (2002), provides a comprehensive mechanism for achieving the desired results. Structured goal setting creates a number of desirable effects:

- Focus – Clear goals naturally direct the mind toward goal directed tasks.
- Increased energy – Clear goals are energizing. When someone has a clear, well-constructed goal, they tend to exhibit a high level of energy when pursuing goal related tasks.
- Increased persistence – The clearer the goal, the more likely someone will continue to pursue it in the face of adversity. This is a clear advantage in a game scenario when different groups of players may have contradictory or conflicting goals.
- Decreased distractibility – Events and information not relevant to the accomplishment of the goal is more easily ignored.
- Improved task related learning and discovery – when something does not go as planned, or when unexpected obstacles surface, people with clear goals are considerably more likely to make considerable effort to devise alternative means of accomplishing the goal.

In addition, accomplishing a well-constructed, meaningful goal can be incredibly enjoyable (Csikszentmihalyi, 1990) and builds self-efficacy (Bandura & Locke, 2003). Both of these last two points deserve further explanation.

As Locke & Latham (2002) point out, a key component of a well structured goal is that progress on the goal is obtained from the environment. In other words, there is, if not continual, then at least regular feedback available on progress toward the goal. Because this feedback is a natural part of the process of goal accomplishment, a person does not need to

constantly evaluate where they are; instead, they can focus themselves totally on the goal-directed behavior. This produces a state of total absorption known as flow (Csikszentmihalyi, 1990). When in a flow state, a person's concentration is totally taken up by the activity and there is simply no room for anything else to intervene. The experience is described variously as "exhilarating," or intensely enjoyable.

Self-efficacy, as distinct from self-esteem, is the belief that one's actions matter and that one has the ability to influence a situation. Bandura & Locke (2003) point out not just that accomplishing goals leads to self-efficacy, but that belief about whether the goal was accomplished and how well also strongly influences self-efficacy. The structure of the goal therefore makes a significant difference to the lessons that a person takes away from the experience of goal accomplishment.

Goal setting when applied to groups is a bit more complex than when applied to individuals. The most important points are that group members must believe the goals of the group, and believe that they will benefit through seeing the group accomplish its goals (Brown & Latham, 2002). When individuals believe that their personal goals are better served by ignoring the group and going their own way, they will tend to do just that, despite all exhortations and pep talks to the contrary (Seijits & Latham, 2000; Schein, 1990). However, certain styles of charismatic communication can increase allegiance to the group and support of the group's goals (Kirkpatrick & Locke, 1996), specifically reverse goal chaining (Balzac, 2004). Support for reverse goal chaining as a way to increase agreement with goals can also be found in research conducted by the Harvard Negotiation Project (Ury, 1991, and Fisher, Ury, & Patton, 1991).

Discussion

Structured goal setting appears to meet many of the needs of well-designed simulation. The obvious question, of course, is whether structured goal setting has been used successfully to design individual and group goals in simulations. In fact, goal setting techniques were used very successfully in a number of games such as *Operation: Atlantis*, *Secrets of the Necronomicon*, *Dragon*, *Nexus*, *Game of Empire*, and *Long Ago and Far Away*. Structured goal setting had mixed results in *Stopover*, *Starfire*, and the *National Capitol Region Pandemic Flu Exercise*. The latter was

a serious game, attended by members of the Department of Homeland Security, Department of Health, the US military, and local businesses and non-profits. All of these games were written or co-written by this author.

Examining the different situations and comparing the games where goal setting produced the results indicated by the research and where it did not, several points become obvious. Player goals needed to be carefully structured to provide strong goal-path clarity: in other words, it had to be very clear to the players that the actions they needed to take would lead them to the desired goals. Goal-path clarity is known to increase motivation (Yukl, 2002) and focus (Locke & Latham, 2002), so this result is not terribly surprising. However, what is much more significant is that goal-path clarity needs to be much greater than the game writers originally thought.

A key element of building goal-path clarity turned out to be the style in which information was presented. Consistent with Kirkpatrick & Locke (1996), one of the most critical pieces was the clear, vivid, description of how each team's goals would change the world and benefit the team both collectively and individually. Whether that goal was world domination by the Secret World Organization for Retribution and Destruction (SWORD), in *Operation: Atlantis*, or the destruction of the world by Cthulhu in *Secrets of the Necronomicon*, the key to successfully motivating the group started with the dramatic presentation of the vision. Each participant knew exactly how their individual needs would be satisfied by helping the group accomplish its goals. This held true even in *Secrets*, where for the Cthulhu cult to succeed meant certain death for the cultists as well as everyone else.

It is highly likely that the presentation of the goal result as a vision of success, coupled with the breakdown into the goal path, produced the equivalent of reverse-chained goals. Because reverse-chained goals cause a person to become significantly more committed to each individual goal along the way, the self-concordance, or personal relevance, of the goals are also increased. The high levels of goal-path clarity also likely serve to increase implementation intentions, or the desire to accomplish a specific step at a specific point. Self-concordance of goals, especially when combined with implementation intentions, drastically

increases goal commitment and completion (Koestner et al, 2002).

When goals were clear and well-defined, player enjoyment increased dramatically, as one would expect. Because social interaction is itself a flow experience (Csikszentmihalyi, 1990), adding the goal structure of the game world dramatically increased the intensity of the flow experience. Vague goals or the lack of a clear group vision, on the other hand, decreased player enjoyment even more dramatically than clear goals and vision boosted enjoyment. Enjoyment is a subjective measure, gauged by the intensity of player involvement versus players sitting around complaining, and the level of positive versus negative feedback during and after the game.

Considering the connections between goals, beliefs about success, and self-efficacy (Bandura & Locke, 2003), a clear implication for educational games is that teaching a skill must be accompanied by the opportunity to use the skill successfully in the game. It is not enough to merely present the information; rather, the player must take the skill and apply it successfully in a variety of situations in order to develop the belief that they can apply the skill. Further, it appears to be important as well that the background of the character being played speak of the character's prior successes. This appears to help the player develop self-efficacy within the role, which then makes them more likely to be successful.

Of the games that demonstrated successful goal-oriented behaviors, there were several key points in common.

- A dramatic and clear vision of the outcome, which includes a description of how the team and its members will benefit from accomplishing their goals.
- Team's big goal broken down into subgoals, and it is clear which team member is responsible for which piece.
- The goal structure is further detailed for each individual team member.
- Goals that complete prior to the end of the game feed into or generate further goals that will carry the character and the team through to the end of the game.

- The following questions are answered for each person:
 - Exactly what is the character seeking to accomplish? Do what extent does the character have control over the outcome, versus needing to recruit others?
 - How will the character and the team know that they are making progress? How will they know if they are succeeding or failing? In other words, how will the game provide the players ongoing feedback?
 - What steps are necessary? What resources? How big is the goal? The bigger the goal and the more resources required, the more other players need to be involved, and hence the more intricate the plot can become.
 - For each character, how will their actions matter to the game? How does pursuing their goals help them to become significant characters in the game? How will their activities benefit them and their team?
 - How will the character break up a large goal? What triggering events or activities in the game will interact with the goal? Is there a specific time or event in the game that puts a deadline on the goal? If the goal triggers significantly before the end of the game, how will it feed into the remainder of the game?

The proper use of structured goal setting has tremendous potential to improve game quality and strengthen the level of interaction. It is a powerful tool to maintain player interest and enjoyment. It does take some work on the part of the game writers to use it effectively, but the results are well worth the effort.

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