Strategic Use of Game Based Learning for Improving Employee Decision Making

Isaac Styles

Game based learning (GBL) supplements traditional business training and competency testing methods business by engaging the user with entertainment and a flexible environment. GBL improves critical thinking and the retention of information beyond that of a classic "Tell-Test" methodology by using experiential and iterative learning. Gamification leverages an emotional and physiological response. Integration of a serious game with business processes has the capability to improve competitiveness by narrowing the learning curve associated with new jobs, coaching employees through business decisions, and sharpening strategic thinking.

The widespread adoption of computers in the modern business environment has employers looking for new ways to leverage these systems to improve competitiveness. This era of big data, data analytics, and high performance computing presents numerous options for enhancing the decision making model but achieve little towards improving employees' ability to make decisions. Game based learning (GBL) supplements a traditional teaching method with a serious game to provide more engaging and memorable experiences. A serious game is a tool that provides, "educational and entertaining content which are supported by a specific game design and mechanics." (Quartel, 2014) Effective utilization usually leverages experiential learning, a first-hand discovery of knowledge. Properly implemented GBL is an effective vehicle for distributing knowledge and opportunities to leverage it occur in training, competency testing, and strategy testing. Integration of a serious game with business processes has the capability to improve competitiveness by narrowing the learning curve associated with new jobs, coaching employees through business decisions, and sharpening strategic thinking.

GBL can promote the development of skillsets that useful on the job. (Quartel, 2014) The initial training that occurs at the beginning of most positions can be improved with a strategic implementation of GBL. Traditional training usually consists of text-based information infused with multimedia elements and assessments. Although this classic "Tell-Test" methodology can be augmented with interactive elements, simple games are not as engaging and lack the plasticity of a well-designed serious game.

In addition to initial training, company policy often requires additional training or competency testing at regular intervals. The "Tell-Test" method loses its effectiveness over time because the experience is not flexible. Users who come to expect the same experience time after time will not be as engaged, and will therefore not learn as effectively. (Quartel, 2014) A serious game may vary parameters at run-time to alter the experience with the intent of creating a more dynamic and thus engaging experience.

A serious game provokes strategic thinking more effectively than the "Tell-Test" method. Users are tasked with developing a strategy or approach. A serious game then engages the user with intermittent feedback, provides positive and negative reinforcement, utilizes short term memory loads, and provides reflection on the user's performance. Feedback from the game offers clues to a modified strategy. This self-directed, iterative learning has been shown to improve student critical thinking. (Holmes, 2015)

GBL can employ gamification to further the learning experience. Gamification is, "the application of game mechanics and experience design to engage and motivate people to achieve certain goals." (Corti, 2006) Well-designed serious games will, "engage the user in a way that provokes interest, attention, or curiosity learning." (Corti, 2006) Proper use of gamification engages the user emotionally and physiologically. This emotional reaction can contribute to an increase in memory retention. It is not uncommon for a game to be an emotional experience. The subsequent physiological reaction that the user may experience is, "increased heart-rate, may laugh out loud, or curse furiously at a virtual character". (Corti, 2006)

One of the most significant advantages of a serious game is the ease which experiential learning can occur. Experiential learning is the first-hand discovery of knowledge through the transformation of experience and can contribute to the retention and application of knowledge in the real-time environment. (Corti, 2006) Serious games allow employees to experience, manipulate, or make decisions in scenarios which might be too costly, too risky, or otherwise impossible. A few genres of games leverage experiential learning and thus are particularly appropriate as training tools. A *simulated environment* places the user in an interactive, realistic environment with the intent to familiarize the user. A *simulated system* allows the user to interact with a complicated system. A *realistically recreated role play scenario* places the user in an unfamiliar situation.

The ability to make a decision based on data is a vital skill for any information worker. GBL improves the learning process and can be used to reinforce the skillset and strategies found useful by the business. At its essence, a game rewards problem solving. Solving the problem is what derives satisfaction on the learner's part.

Works Cited

Quartel, D. (2014). Serious Gaming For The Strategic Planning Process. IEEE 16th Conference on Business Informatics, 1-2.

Corti, K. (2006). Game-based Learning; A Serious Business Application. Informe de PixelLearning. 6(34), 1-2.

Holmes, N. G., Wiseman, C. E., & Bonn, D. A. (2015). Teaching Critical Thinking. PNAS, 122(36), 1-1.