

A Systematic Guide to Game-Based Learning (GBL) in Organizational Teams

*Transform Performance Through
Experiential Learning, Social Learning and
Team Dynamics*

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Chapter 2: How effective is Game-Based Learning?

2.1 Research

The most effective GBL seems to blend 3 important components - Gamification, Business Simulation and Informal/Social Learning. I will try to summarize some the key research findings on the effectiveness of each of these disciplines:

Gamification can make people engage more [2], learn/retain more [3], and change behavior better [4].

Business Simulation is more effective than case studies [5], best if it uses real data [5], improves learnings [6], and requires skilled facilitation [7].

Informal/Social Learning accounts for 80-95% of all operationally relevant learning [1].

OK, but what is the evidence for the 3 disciplines working together as GBL?

Jessica Trybus, a Game-based Learning Guru and Director at Carnegie Mellon University, has conducted research [8] into 3 different approaches to learning.

Jessica evaluated passive training methods such as classroom lectures and e-learning, hands-on training such as apprenticeship programs and game-based learning across 8 potential benefits:

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1. Cost-effectiveness
2. Low physical risk/liability
3. Standardization of assessments allowing comparisons
4. High Engagement
5. Learning pace tailorable to individual
6. Immediacy of feedback in response to mistakes
7. Ease of transfer of individual learning to work place
8. Learner Engagement

The research concluded that passive training delivered the first 3 benefits, hands-on training delivered the last 5 benefits but **game-based learning delivered all 8 benefits!**

In other words, well designed game-based learning can combine the benefits of both passive training and hands-on training.

Gartner Research, a major influencer concerning whether and when specific new technologies actually make business sense for major organizations, [9] sums it up very nicely by advising their clients in a major report that:

“GBL can significantly accelerate the transfer and application of knowledge. Enterprises should leverage the scalability and immersive characteristics of games to accelerate the time to competency and the depth of competence”.

2.2 Case Studies

Now that we have looked at the quantitative I will summarise the results from just three of many case studies to give you some *qualitative* insights into the benefits of GBL. More details and further case studies can be found at <http://dashboardsimulations.com/category/case-studies/>

Before I do this, however, it is interesting to note that most GBL is delivered in the context of Leadership and Management Development Programmes. *Deloitte* recently published research [10] suggesting that a well-led/well-managed enterprise can be up to 70% more valuable than a poorly managed one - all else being equal. This gives some idea of the potential prize for companies who are able to use GBL to sustainably improve the leadership and management skills in their organisations.

Spar Wars (A fully Custom GBL Solution)

SPAR is a major convenience store group located across UK, Ireland and Europe. The retailer puts a strong emphasis on providing excellent customer service, choice, and value, to allow a more convenient shopping experience closer to home. They also feel strongly about supporting local suppliers and the local community.

As a result of a detailed discussion with senior leaders from *The Henderson Group*, who operate the SPAR Franchise for Northern Ireland, it was established that their store managers needed to spend more time developing their people to improve staff retention, and also to focus more on customer service to retain the most loyal customers.

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They decided to commission a custom GBL solution (*Spar Wars*) that would allow participants to experience managing a convenience store over a half day, but representing four trading months, and allowing them to:

- Manage store service levels across a range of business aspects via visual KPIs
- Maximise store financial performance each month and for the total trading period
- Use good judgement in moving resources from one part of the store to another

Sam Davidson, Group Human Resources Director, Henderson's, who sponsored the project and provided subject matter expertise made the following observations about the simulation:

"We have developed a powerful business simulation that allows our managers to run one of our convenience stores for 4 months in a single day. The pressurised, realistic and highly competitive nature of the game brings a unique dimension to the learning. We are expecting to gain significantly higher benefits and engagement from this game than other forms of training."

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Glasgow City College, Retail Fashion Game (An Off-the-Shelf GBL Solution)

The requirement was for a fashion specific retail simulation for students that would give them a practical insight into the real decisions and dilemmas that buyers and merchandisers actually encounter within the dynamic retail fashion sector.

There was also a requirement for a team-based simulation, to allow students to experience working in teams to discover what type of team players they are, and how well they work together under pressure.

The *Catwalk* Retail Fashion Simulation allows teams to run a major designer fashion brand in a national market over 4 seasons. For a team to succeed they need to be running a profitable, fashionable and socially responsible business. The simulation is conducted using a highly structured approach that blends gamification and informal/social learning. In this instance it was played with 4 competing teams with 6 students in each team (with one team made up of just lecturers to add a bit of spark to the competitive edge).

Key aspects of the simulation included:

- The importance of product design and “product outfit families” to maximise customer basket size
- Correctly positioning your different product brands in the market in terms of pricing, image and material/production costs
- Managing offshore manufacturing in a manner consistent with good Corporate Social Responsibility (CSR)

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- Anticipating and responding well to both supply-side changes and sales-side trends, including competitor activity.

Maureen Houston, Retail Course Leader at Glasgow City College, who introduced and monitored the game, made the following observations:

“It makes what I have been teaching in class really come to life. The simulation is also really useful for students as it teaches them to appreciate suppliers’ roles and the importance of good suppliers. I think the competition aspect really engages the students, and I liked the added touch of a prize for the winner. I could definitely see the simulation being used over the course of a whole module, in which students could study a season one week and debrief the next week.”

Twining’s B2C Simulation (A Customized Off-the-Shelf GBL Solution)

Twining’s, based in Andover, Hampshire, is world famous for its distinctive teas and malt drinks. Twining’s operates internationally within the Associated British Foods (ABF) Group. Each year Twining’s runs a week-long Leadership Development Programme for high-potential managers.

A full day of this programme is dedicated to *Consume*, an immersive Team-Based Business Simulation game, where the participants form executive teams to compete intensively in running Twining’s Country businesses for a full 3-year period, marketing three types of premium teas against a realistic set of competitors’ market shares.

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The business simulation requires the teams to engage with the central dilemmas of such a venture including:

- Price Elasticity (The impact of Price on Demand)
- Product Mix & changing Consumer Preferences
- Profitability versus Market Share Growth
- Value Chain Investment versus Organisational Health Investment

Simon Brocket, International HR Director at Twining's, who sponsored the simulation and provided subject matter expertise for the business simulation, made these observations after the game had been run with multiple teams of managers over a 3-year period:

“Realistic simulation is a powerful though often overlooked and underutilised approach to building capability. The business simulation we developed gives people an experience that calls for them to develop and deploy competitive strategy. The learning people derive from the experience is very powerful, and because it is theirs the transfer to the workplace is so much easier. We have been able to use the same business simulation over and over again with different groups within the company so the Return on Investment has been exceptionally good for us.”

2.3 Benefits

When I interview game participants or business sponsors after GBL events the benefits they report (directly and indirectly) consistently fall into 5 clear categories:

1. Virtual Experience

This is the classic flight simulator learning model where participants get to try out 'dangerous things' in a safe and forgiving environment with no adverse business consequences. [For more detail on the history of aviation flight simulation and what the learning games industry can learn from it please see Appendix E].

'Virtual Experience' is not only the important decision-making which participants can practice but also the scenarios they encounter. Also the major and minor unexpected 'shocks' which they have either brought on themselves or which have been pre-programmed into the simulation game beyond the participants control.

A number of participants have spoken with me 6-12 months after GBL events and reported that 'things which happened in the sim actually happened afterwards in the real world'. This should not be such a surprise as a good game designer will base some of the in-game shocks on actual events which happened in the past to give the game realism and on the assumption that history often repeats itself!

2. Social Learning

Social Learning is learning from others through conversation and sharing. In the context of GBL this means learning from fellow game participants, subject matter experts, facilitators

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and senior business participants. It is a common lament of larger companies that ‘we don’t know what we know’. A well-designed social GBL game is one of the most effective ways for organizations to disseminate and spread knowledge, experience and best practice between colleagues. [For more on Social/Informal learning please see section 1.5, 8.8 and Appendix F].

3. *Resolving Dilemmas*

Any well designed GBL event will present the participants with dilemmas. These can come in many forms and include business dilemmas, leadership and team dilemmas. [see section 6.2]. Simulation games should reflect the real world in that there are rarely enough resources (such as money, people, machinery and stock) to achieve everything you would ideally like to achieve.

Hard choices have to be made in the light of the participants understanding of their organizational priorities, targets and values. A well facilitated team game can allow participants the space to ‘play with dilemmas’ creatively in a much more relaxed way than would ever be possible in their real jobs. In so doing they may discover some new solutions and approaches they never even considered before.

4. *Change and Pressure (Agility)*

As well as having to address dilemmas and scarcities a GBL event should also model the real world situation that things are always changing unexpectedly and that there is always a time pressure factor. This is very the essence of ‘agility’ – the ability to handle unexpected change well and in a timely manner.

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One of the most important leadership skills is to be able to determine which deadlines can be moved and which ones cannot. For example, the discipline of submitting your team's results on time (or being penalised) helps people understand the non-negotiability of certain financial reporting deadlines particularly in big organisations where there is an extensive review and consolidation process which, to work, requires all its inputs completed and submitted to a strict deadline.

5. *Confidence and Ambition*

Finally, a common theme reported by game participants 3-6 months have a game event is that they feel more confident and are taking on bigger responsibilities in their jobs/roles. When I ask the question 'why' a common response is that the game they played was very challenging but yet they still succeeded (for example, running a flour mill or a country business unit in the face of challenging trading and market conditions)!

The participants in such as game often feel they, and their colleagues, really achieved something worthwhile. There is interesting learning here for GBL designers around 'requisite difficulty'. A game needs to be difficult enough to be a real challenge and for the 'jury to be out' until near the end as to whether they will succeed or not. But it must not be so difficult that participants feel they failed in the end as most (but not all) people find it hard to take positive learning from this kind of experience.

In a sense this final benefit is really a consequence of the other 4 benefits but I encounter it so frequently I think it is worth listing it here separately.

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Game Dimensions and Learning Modes

Finally, in closing on the GBL benefits topic, there are two further important observations about the benefits possible from GBL:

Game Dimensions

Each of the 5 benefits listed could be realized in any or all of the 3 ‘Game Dimensions’ – topic, team or touch [for more on Game Dimensions please see section 5.2].

So, for example, a participant might gain ‘Virtual Experience’ of the specific skills involved in being a leader on a cruise ship plus the team dynamics of this plus insight into how they personally reacted under pressure in this situation.

Game Learning Modes

Each of the 5 benefits could also be realised through any or all of the 3 ‘Learning Modes’– planned, shared and serendipitous [for more on Learning Modes please see Appendix M].

This means that participants have effectively 3 bites at the cherry of learning in a GBL! They might learn something because they were looking to learn it (planned), and/or because somebody else shared it (shared) and/or because it just came up out of the blue (serendipitous).

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Further Reading

1. Jay Cross, Informal Learning, Pfeiffer, November 2006
[Multiple References, especially Appendix. B]
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