

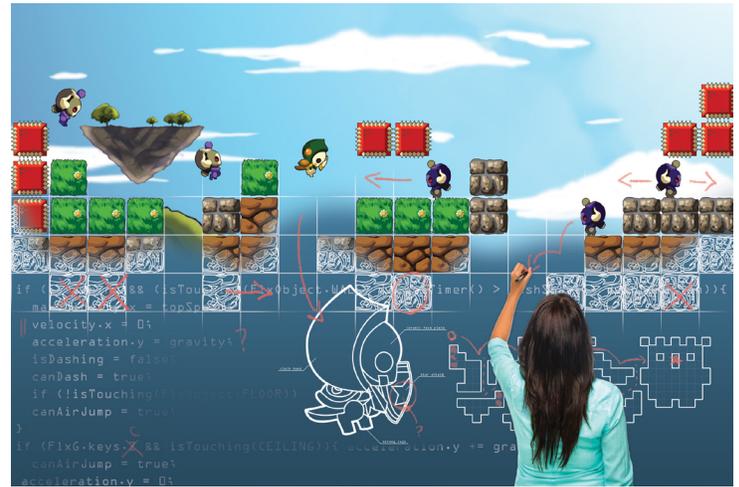
Center for Games & Impact | E-Line Game Infused Theory of Change for Impact

Building upon the vision of ASU President Michael Crow for a New American University committed to excellence, access, impact and research that contributes to the public good, the Center for Games and Impact at ASU and E-Line Media have joined forces to bring together leading researchers, learning scientists, game designers, developers and entrepreneurs all committed to harnessing the unique power of games to make meaningful positive impact. By examining the full lifecycle of impact games—from research, design and development to publishing, assessment and optimization—we seek to pioneer, implement and share best practices for harnessing the unique power of games for achieving sustainable and scalable outcomes.

Games for impact need to be treated as part of a broader services framework that must be continually optimized for ecosystem integration, ongoing sustainability and scaled impact.

We have built a double-bottom line commercial studio (staffed with leading game developers) and a university-based Center (staffed with leading research scientists) to create game-infused products and services that can be continually optimized for ecosystem integration with the ultimate goal of producing sustainable solutions to society's biggest challenges.

As background, computer and video games have emerged as one of the most powerful mediums of the 21st Century, generating billions of hours of highly engaged entertainment. A growing body of research is also highlighting the enormous potential of games to help address some of the most pressing social, cultural, scientific and economic challenges of the 21st Century. Digital games are different from other media in that they are interactive, participatory and highly engaging. They enable players to step into different roles (e.g. scientist, explorer, inventor, political leader), confront a problem, make meaningful choices, and explore the consequences. Well-designed games and game-infused experiences offer a delicate balance of challenges and rewards that can drive deep levels of engagement and time-on-task, enabling players to advance at their own pace, fail in a safe and supportive environment, acquire critical knowledge just-in-time (vs. just-in-case), iterate based on feedback and use this knowledge to develop mastery.



While constructing an individual bounded game has the potential to result in strong engagement and foster desired learning outcomes, central to our theory of change is to expand this vision of impact games to think of the medium as on-going services that support multiple game-infused experiences and real-world extensions where core lessons are brought outside the fictional gaming context. Many of the most successful games in the entertainment space have brought players together in affinity spaces that extend well beyond the game. Through these affinity spaces, players interact socially around games... discussing them (often requiring extensive reading and writing), playing them cooperatively or competitively, and even potentially modifying them. These interactions, which take place around the game, act as game extensions and provide the game a larger life and impact. This meta-game experience is what we call Big "G", and it acts as a force multiplier on the impact potential of bounded game-play experiences.

To clarify, small "g" games are bounded; they are self-contained and finite, pre-optimized to introduce, cover or re-enforce a particular lesson and well suited for learning in a safe, simulated and structured environment. Further, by leveraging embedded assessments, pedagogical scaffolds, game consequentiality, and teacher dashboards they can provide an important learning tool through which experiential learning can occur and be effectively managed by a teacher in the context of actual classrooms.

Game Infused Theory of Change for Impact



Key genres of small “g” games:

- **Adventure** (optimized for enabling students to take on identities and solve problems in an engaging, narrative context)
- **Simulation** (optimized to capture aspects of the real world in order to highlight underlying system variables)
- **Strategy** (optimized for students to solve complex problems balancing multiple variables to accomplish desired outcomes)
- **Toolbox** (Optimized for students to create content with powerful tools to realize diverse goals and develop new media literacies)

Big “G” game infrastructures are open-ended and seamlessly integrate the small “g” games into a larger, flexible ‘meta-game’ structure and affinity space that fosters user-driven extensions and adaptations in support of real-world goals and outcomes. It is with the Big “G” components that we transform individual experiences within a game into a dynamic interaction to enable learning to be applied and extended beyond the classroom walls.

Key components of Big “G” include:

- **Learning Platform** (easily customizable and optimizable platform for hosting and managing all games and associated designer and user produced content, as well as one’s progression through various journeys).
- **Data and Analytics Dashboard** (allow teachers, students and other key stakeholders to not only see data, but also interact with the game and optimize the learning experience based on this data)
- **Social Communities and Affinity Spaces** (a framework for engaging in discussion, co-mentoring, tutoring, critique, reflection, “theory crafting”, and designing)
- **Achievement-based framework and gamification layers** (carefully designed extrinsic reward systems and intrinsic motivators to focus attention, motivate action and provide a trajectory of advancement)
- **Meta-game identity** (framework for personalized avatars, meta storylines, and open APIs that unite small “g” and real-world experiences)
- **Smart tools** (tool systems which can be used as templates for real-world applications and move learning beyond the classroom walls)
- **Modding tools** (powerful tools, opportunities, and support structures so students and teachers can extend, shape, and augment the core platform)

To be clear, while individual small “g” game experiences can and do achieve learning success, we believe the deeper learning outcomes come through the seamless integration of the small “g” games with a Big “G” infrastructure that both connects and extends each of the individual learning modules.

Harnessing games for impact around a core initiative area involves a scalable platform and set of design, technology and implementation best practices, along with a green light process for selecting specific projects that collectively result in a capital-efficient, engaging and effective vehicle for furthering key impact objectives.

Another key tenet of our theory of change is that game-infused experiences are most effective when created as services that are integrated, managed, and continually optimized for ecosystem integration, ongoing sustainability and scaled impact - as opposed to products that are released and remain static. Building a game-infused ecosystem requires building trust and strong communication across multiple stakeholders with a flexible design process that iterates in relation to how well the system is meeting impact goals. Continual optimization of the system requires ongoing data collection, including data mining of community usage, creating specific assessments focused on key priority areas, and examining real-world participation to ensure outcome achievement.

A successful rollout would include processes and technologies to ensure implementation fidelity and allow for local optimization of products and services to maximize sustainable and scalable outcomes.

This service-based model not only enables responsiveness to teacher, student, and other stakeholder feedback, continually maximizing engagement and learning outcomes, it also enables responsiveness to shifting dynamics in the ecosystem of implementation. An additional benefit of an on-going service is that it offers an expandable infrastructure allowing for the addition of new modules and capabilities.

Realizing this vision requires a deeply committed, fully integrated world class team that spans core competencies in learning sciences, content domains, research methodologies, game development and ‘double-line’ publishing mechanisms for game-infused learning products and services built on sustainable models that can be continually optimized for effectiveness and scaled implementation. The *Center for Games and Impact* at ASU and *E-Line Media* partnership has constructed a game-infused theory of change, an impact-based approach, and a human and technological infrastructure necessary to develop impact-friendly business models for publishing game-infused products and services that can be optimized to achieve sustainable and scalable impact.