

# Simulation and Gaming: Engagement special issue

## Introduction

We were delighted, though not a little nervous, to find that the Editor of this worthy journal shared our interest in tackling the theme of 'engagement' in the field of games and learning. *Engagement*, and the closely related – and often conflated – concept of *motivation*, are terms that appear throughout both the educational and game design literatures. The terms are used in a variety of contexts, representing a wide range of sociological, psychological or behavioural states, and for a diverse (and often imprecise) set of purposes. Even within this one specialist journal, the terms can be found 150 times within titles or abstracts since 1970; and nearly 500 times within the full text of articles. Wider searches quickly reveal broad and varied usage across the fields of education and game studies.

Given this widespread, and apparently confused and conflicting, use of the term, we felt that the time was right to ask researchers and practitioners in the space where games and learning intersect to consider what we mean by 'engagement'. We also asked them to reflect on what use it might have within our area of study: both now, and looking to the future.

The response to our call was strong: this is clearly an area that energises many of us in the field, one way or another. We carefully considered all submissions, with help from a strong panel of reviewers, and the resulting collection of ten articles emerged to provide what we hope is a coherent, multi-faceted view on engagement within games for learning, which will focus research and practice in the years ahead.

## Defining the field

In a traditional introduction to a special issue, one might expect us to set out the major themes, and provide a context with which readers can approach the issue. Engagement is such a wide and broad construct, however, that we decided, early in the process, that a few paragraphs here would do it little justice. We therefore rolled up our sleeves and delved in to the complex, multi-disciplinary use of the term to provide the first, orientating, article for this issue (**Whitton and Moseley**). Through a synthesis of literature across the 'engagement with games' and 'engagement with education' threads, and by unpacking the multitude of uses and nuances of terminology, we found that use of the term coalesces around six main themes: *participation, attention, captivation, passion, affiliation, and incorporation*. As an overview of the field, such themes may provide useful points of reference for the reader when reading the other articles in this issue. Going forward, our proposed model based on these themes may provide a basis for consideration of engagement when thinking about, designing for, or studying games and education.

In the second article, **Filsecker and Kerres** focus in on the distinction between engagement and motivation: arguing that engagement should be differentiated from motivation (and in particular *intrinsic* motivation), and recasting the term as a wide range of cognitive, emotional, motivational and volitional processes that might occur when playing a game. Their framework is drawn from an extensive study of the literature surrounding these terms, and provides four dimensions (behavioural, cognitive, emotional and personal) to help examine how, for whom and under what circumstances educational games might work.

## Engagement and Game Design

Filsecker and Kerres's results have clear implications for the design of future educational games, and **Ruggiero and Watson's** adds to this with some targeted, evidenced advice for future game design. In her article, she looks at how engaging with a reflection and action loop (*praxis*, or Kolb's experiential learning cycle) might help designers to create games that are more engaging for learners. She interviewed 22 international game designers to determine the nature of their engagement with various stages in the game design process, and found a number of existing models in use: a fascinating read for anyone involved in designing or developing games for learning.

**Bouvier and colleagues** tackle the problem that many authors in this special issue have identified: that engagement as a concept, in the area of learning games, is confused. In various studies it is referred to as 'immersion', 'involvement', 'presence', 'flow' and other terms; when looking at *player behaviours*, the range and references grow wider still. The authors seek to bring some order to this field of study, by characterising and delineating both types and behaviours of engagement. While they identify that further tests against these typologies will be needed, this may provide us with a way forward in bringing some order to a complex and distributed field. Most usefully, the authors plan to help this process by providing visual categorised data to game designers: a very practical way to help designers deal with motivation and engagement going forward.

As Bouvier and colleagues describe, player behaviour can be influenced by a range of factors; one key, and often very personal, factor is that of their relationship with in-game characters. **Mallon and Lynch** focus on this fascinating area, looking specifically at player engagement in the relationship between the player and their avatar, and with other non-player characters. In a study of undergraduate students, they determined negative and positive responses to character interactions, providing valuable data to guide avatar and character development in future games to maximise player engagement.

## Measuring Engagement

In a field that is difficult to define, any measurement of its features will necessarily be difficult. Conversely, measuring and quantifying those very features might be the key to a greater understanding of the field - and its practical usefulness. Four articles within this issue seek to redress this cyclic problem, with a number of creative approaches.

**Marty and colleagues** constructed two experiments designed to measure engagement across multiple dimensions. To achieve this they utilised a number of existing measurement methods (both in-game analytics, and qualitative and physiological studies of player interactivity with the game). The differing outputs from each serve to promote the facts that many facets of 'engagement' may be worthy of study, and that all forms of engagement cannot be measured using one single test or method. This view is supported by **Phillips and colleagues**, who argue that when we study engagement in relation to games for learning, we should consider categories of engagement separately, rather than conflate them, as many studies do. They consider different methodologies that lend themselves to studying behavioural, cognitive and affective aspects of engagement. **Sharek and Weibe**, after considering the current range of analytic tools for measuring forms of engagement, developed a real-time diagnostic tool for measuring video game engagement, capturing behavioural data based on the frequency of clicks on an on-screen game clock. They saw different patterns of clicks corresponding to periods of boredom, flow and frustration, which led to some surprising results.

Focussing on the players themselves, rather than in-game dimensions, **Kirshner and Williams** used a 'gameplay review method' in which they recorded players as they played WORLD OF WARCRAFT, and then played the recordings back to them. As they did so, they observed the players' interactions with, and responses to, the recordings. By focussing on in-game performance, the authors were able to discuss engagement with the players in tangible terms, and hence determine particular aspects of gameplay that promoted higher engagement (both perceived and evidenced through progression in the game).

## **Engagement and Learning**

We have considered theoretical models to categorise engagement, design methods to increase engagement within games, and methodologies to measure the resulting engagement. What remains unanswered, however, is the presence of a link between engagement and learning – and the nature of that link.

In the final article of this special issue, **Iacovides and colleagues** examine this very question: does engagement with certain games or aspects of games lead to enhanced learning experiences within those games? To investigate this they developed a framework, which combines a study of what is learned, with an acknowledgement of player identity as part of an iterative process. The framework approach, and initial results, has implications for both formal and informal learning with games.

In all, we are delighted to bring you this collection of articles, which we believe makes a significant contribution to the literature on games and engagement. We hope that readers will find this to be an insightful and valuable special issue that sheds light on the diverse ways in which engagement is constructed, measured, and researched in relation to learning.

Alex Moseley and Nicola Whitton  
Special Edition Editors  
August 2014

## **Acknowledgements:**

We would like to thank all authors who submitted articles for this special issue, for your patience and collegiality over the editing process. The dialogue we had with each of you in this fascinating area, and your contribution to the resulting collection, has been a thoroughly rewarding experience.

We would also like to thank the Editor, David Crookall, for his advice and guidance; and extend a special thank you to the strong team of reviewers who generously gave of their time to look through the articles, and contributed hugely in their overall development: Kurt Squire, Liz Boyle, Richard Joiner, Dominik Petko, Theresa Horstman, Andrew Walsh, Rachel Bailey, Paul Hollins, Mark Childs, Simon Brookes, Katie Piatt, Daniel Livingstone, James Duggan, Fiona Trapani, Rosie Jones.