

This is a repository copy of *How to Do Gameful Design*.

White Rose Research Online URL for this paper:

<https://eprints.whiterose.ac.uk/120651/>

Version: Accepted Version

---

**Proceedings Paper:**

Deterding, Christoph Sebastian orcid.org/0000-0003-0033-2104 (2017) How to Do Gameful Design. In: CHI PLAY'17 Extended Abstracts. The ACM SIGCHI Annual Symposium on Computer-Human Interaction in Play, 15-18 Oct 2017 ACM , NLD , pp. 581-583.

<https://doi.org/10.1145/3130859.3131446>

---

**Reuse**

Other licence.

**Takedown**

If you consider content in White Rose Research Online to be in breach of UK law, please notify us by emailing [eprints@whiterose.ac.uk](mailto:eprints@whiterose.ac.uk) including the URL of the record and the reason for the withdrawal request.

---

# How to Do Gameful Design

**Sebastian Deterding**

Digital Creativity Labs

University of York

Heslington, YO103QH York, UK

Sebastian@digitalcreativity.ac.uk

**Abstract**

Gamification is an increasingly popular strategy for increasing user engagement. But how to design gamified systems? While there is an abundance of industry methods, they often remain elusive in essential steps and lack grounding in evidence. This course provides a hands-on introduction into a comprehensive, research-based method for designing gamified systems, the intrinsic skill atoms approach. The method has been successfully used in over 20 industry projects and validated in its effectiveness. In two 80 minute blocks, participants will learn the central challenges of gameful design and how to do it in practice, working through the method with a practical case study.

**Author Keywords**

Gamification; gameful design; playful design; game design; design methods; design research

**ACM Classification Keywords**

H.5.m [Information Interfaces and Presentation (e.g., HCI)]: Miscellaneous; H.5.2 [User Interfaces]: Evaluation/Methodology, User-Centered Design; H.5.3 [group and Organization Interfaces]: Evaluation/Methodology; K.8.0 [Personal Computing]: Games

---

Permission to make digital or hard copies of part or all of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. Copyrights for third-party components of this work must be honored. For all other uses, contact the Owner/Author.

*CHI PLAY'17 Extended Abstracts*, October 15–18, 2017, Amsterdam, Netherlands

© 2017 Copyright is held by the owner/author(s).

ACM ISBN 978-1-4503-5111-9/17/10.

<https://doi.org/10.1145/3130859.3131446>

## Schedule

### Block I

00-30min Presentation  
30-50min Collective skill atom  
analysis & result sharing  
60-80min Component analysis

### Break

### Block II

00-20min Result sharing and  
discussion of emergent questions  
20-40min Ideation of design  
improvements using lenses  
40-60min Result sharing  
60-80min Discussion emergent  
questions

## Introduction

Gamification, the use of game design elements in non-game contexts, is an increasingly popular strategy for increasing user engagement with interactive systems [5]. Despite the growth of gamification as a practice and research field, there is still relatively little reliable guidance on how to design gamified systems [1,4]. Existing industry methods are rarely grounded in research and often skip over crucial aspects of the design process, such as selecting the right game design elements [2]. Existing design frameworks from research in turn are seldom trialed under industry conditions or remain at a level of abstraction that likewise leaves many degrees of freedom [2]. Finally, most current methods pursue a pattern-based approach that fails to capture the systemic-emergent nature of games and gameful experiences and leads to 'cookie-cutter' application of the same few design features irrespective of the application context.

To address these issues, we developed a research-grounded method for gameful design, the lens of intrinsic skill atoms approach [2]. This method revolves around identifying the inherent challenges in the to-be-gamified activity, to then tease out the latent skill atom around it – the systemic structure of goals, actions, rules, and feedback that give rise to said challenge. The method then guides designers with the help of design lenses [6] to either ideate entirely new skill atoms, or to identify shortcomings in the particular design of the skill atom's elements and ideate particular improvements that would support motivation and engagement.

The method can be seen as one of the most mature and complete methods in the field, having been tested

and iteratively refined in over 20 industry projects and workshops, ranging across a large number of practitioner audiences and use cases, from online dating to car assembly training, disaster response, quality assurance in highly automated factory contexts, self-driven learning of analytics software, and online video engagement. has also seen adoption among HCI researchers and been validated in its utility and effectiveness by independent research groups [7]. Despite its extensive documentation [2], as any design practice or method, gamification design in general and the intrinsic skill atom approach in specific involve tacit knowledge and enculturation that are by definition hard to convey through publications alone.

## Benefit and intended audience

At the end of the course, participants will be able to independently understand and identify the key challenges of gameful design and apply the lens of intrinsic skill atoms method in the design of gamified systems. This course will be of interest for all design practitioners in the UX and games industry in designing gamified systems, as well as HCI researchers wanting to design gamified systems or advance the research of gamification design.

## Prerequisites

The course is open to all experience levels, although participants with basic familiarity with interaction and/or game design methods (user research, ideation, prototyping, user testing) and gamification will benefit the most.

## Content

The course is prefaced with online materials shared in advance of the course to familiarize participants with

the concepts and the worked example of the course, an online dating site. The on-site course is structured into two 80 minute units. It begins with an introductory lecture that presents the method in its steps. Participants then use instructions and templates to collectively identify the latent skill atom of the worked example, followed by questions about the method arising in this step.

Participants will then break into small groups that use provided design lenses to each analyze one structural element of the skill atom per group – goals, actions, feedback, rules, or challenge – and assemble and sketch improvement ideas via provided ideation techniques and sketchboards. The course closes with a facilitated open question segment to address key recurring issues that emerged in the course of applying the method.

### About the course tutor

Sebastian Deterding is a senior research fellow at the Digital Creativity Labs at the University of York. As head of the Gamification Research Network, co-editor of *The Gameful World* [3], and co-author of field-defining publications [6], he is one of the key scholars in gamification research. In addition, he has a 10+ year career as a user experience, game, and gamification designer and consultant, creating engaging experiences touching millions of users for clients including the BBC, BMW, Deutsche Telekom, KLM, Novartis, or Supercell. He is the creator of the intrinsic skill atoms method and has taught it to over 300 UX, game design, and digital product practitioners across the world.

### Resources

Participants will receive the underlying article [2] and workbook in advance of the workshop and will receive a printed workbook with step-by-step guidelines and templates at the workshop.

### Acknowledgments

This work was conducted in the Digital Creativity Labs (digitalcreativity.ac.uk), jointly funded by EPSRC/AHRC/InnovateUK under grant no EP/M023265/1.

### References

1. Sebastian Deterding, Staffan Björk, Lennart E. Nacke, Dan Dixon, and Elizabeth Lawley. 2013. Designing Gamification: Creating Gameful and Playful Experiences. In CHI 2013 Extended Abstracts, 3263–3266.
2. Sebastian Deterding. 2015. The Lens of Intrinsic Skill Atoms: A Method for Gameful Design. *Human-Computer Interaction* 30, 3–4: 294–335. <https://doi.org/10.1080/07370024.2014.993471>
3. Steffen P. Walz and Sebastian Deterding (eds.). 2015. *The Gameful World: Approaches, Issues, Applications*. MIT Press, Cambridge, MA, London.
4. Alberto Mora, Daniel Riera, Carina Gonzalez, and Joan Arnedo-Moreno. 2015. A literature review of gamification design frameworks. *Proc. 7th International Conference on Games and Virtual Worlds for Serious Applications (VS-GAMES)*. <http://doi.org/10.1109/VS-GAMES.2015.7295760>
5. Sebastian Deterding, Dan Dixon, Rilla Khaled, and Lennart E Nacke. 2011. From Game Design Elements to Gamefulness: Defining “Gamification.” In *MindTrek’11*, 9–15.
6. Bill Scott, Theresa Neill, and Rochelle King. 2010. *Designing with Lenses: A library of design lenses*.

Retrieved January 15, 2013 from  
<http://www.designingwithlenses.com/>

7. Bauke Buikstra, Rens Kortmann, Eric Klaassen, Laurens Rook, and Alexander Verbraeck. 2015. In Pursuit of Evidence: A Design and Empirical Study of a Gamified Online Marketplace. In MindTrek'15, 73–80.