

GAMIFICATION FOR LEARNING

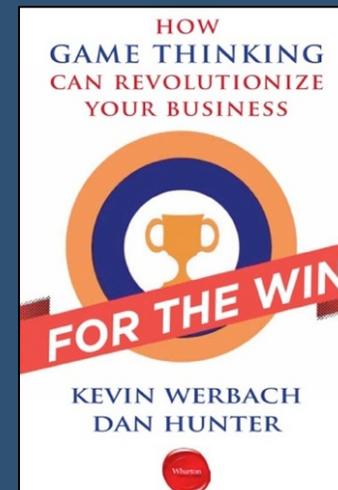
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Wharton School, Univ. of Pennsylvania

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Twitter: @kwerb





"We find our younger employees respond better to 'try to beat your high score,' than 'we need to increase profits.'"



1.7 billion

4,773 5 More in 4:28 12 404 3

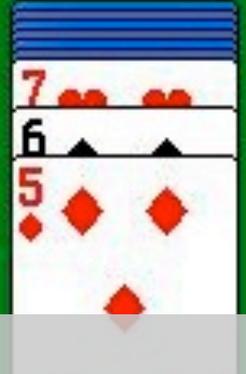
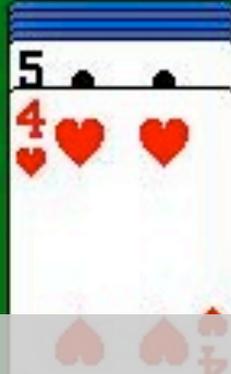
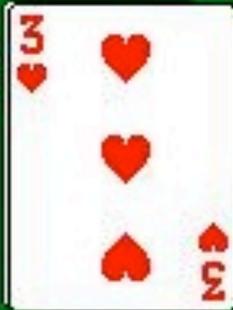
ADD COINS & CASH

BO

The top bar of the game interface features several resource indicators. From left to right: a coin icon with the value 4,773; a green cube icon with the value 5; a yellow lightning bolt icon with the text 'More in 4:28' and the value 12; a purple envelope icon with the value 404; and a blue bar with the value 3. Below these is a blue button labeled 'ADD COINS & CASH' with a coin icon. On the far right, a yellow bar with the letters 'BO' is partially visible.

100 million



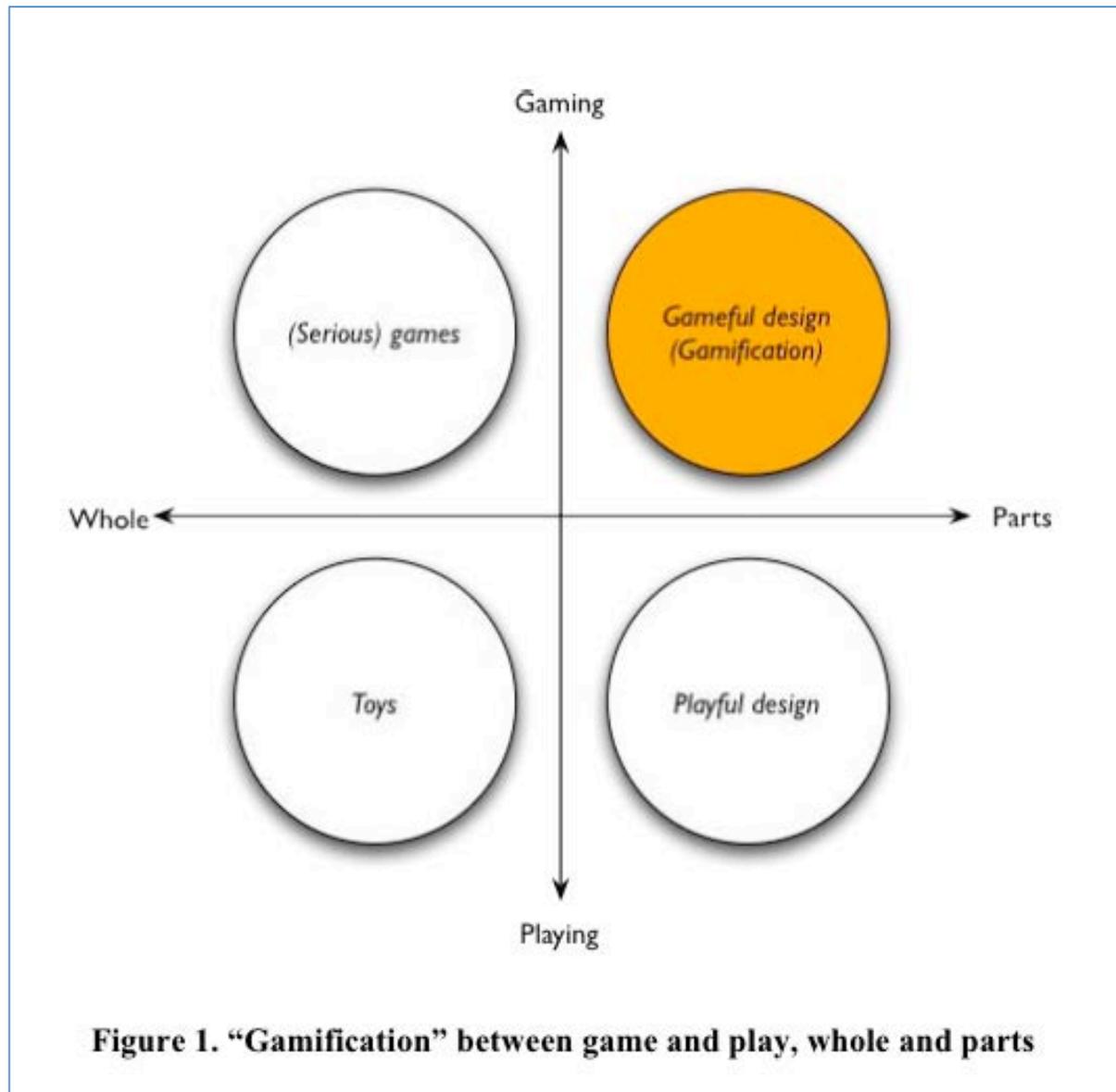


9 billion

We're All Gamers Now

- Video game industry: over \$70 billion worldwide, or double Hollywood box office revenues
- 97% of kids 12-17 play videogames (Pew Foundation)
- The average game player is 30 years old (ESA)
- 47% percent of all game players are women (ESA)
- 44% of US/UK adults have played a mobile game in the last month (PopCap/Information Solutions)

what can we
learn from
(digital) games
to help with
other things?



Sebastian Deterding, et al, *From Game Design Elements to Gamefulness: Defining “Gamification”*, Mindtrek 2011 Proceedings

GAMIFICATION

Gamification is...

The use of **game elements**
and **game design techniques**
in **non-game contexts**.



Points

141911 586 1817
1191
9802

Resource Collection

Progression

Levels

Quests

Avatars

Social Graph



Matthew's Empire
Population: 660/1000

John	Elana	Damon	Matthew	Mical	Louis	Alex	Steele	Thor
7	11	6	7	10	10	13	20	16
12	18	18	20	21	21	22	24	22

Invite Friend



Progression

Levels

Points

Rewards

Quests

Social Graph

Avatars

Badges

Feedback

keas

Search for a player or team

Samantha W.

Home

Profile

Team

Challenges

News Feed

Share: Status Photo

What's new with you?

Tobias Y. Wife and I played Tag with my three year old yesterday for 20 great exercise. a day ago Like Comment

CS, Rick K., and 2 others like this

Samantha W. I love playing with my kids. We don't realize that we're actually excercising [sic] when we're "playing." I love it!! a day ago

Elaine P. I had a house full of teenagers this weekend. I had to chase after them but, it was definitely ex a day ago

Write a comment...

Rick K. Making positive lifestyle changes can add years to your life. One study of Harvard alumni found that those who stopped smoking lowered their mortality rate by 41%. Those who began a moderately vigorous exercise program... a day ago Like Comment

Tobias Y. like this

Jessie W. Agree a day ago

Earn More Points see all »

Do 5 squats +4 Points -4 Energy

Quiz: What's your Blood Pressure IQ? +2 Points -2 Energy

Invite a Colleague +5 per colleague who registers Type emails separated by commas

Weekly Goals edit »

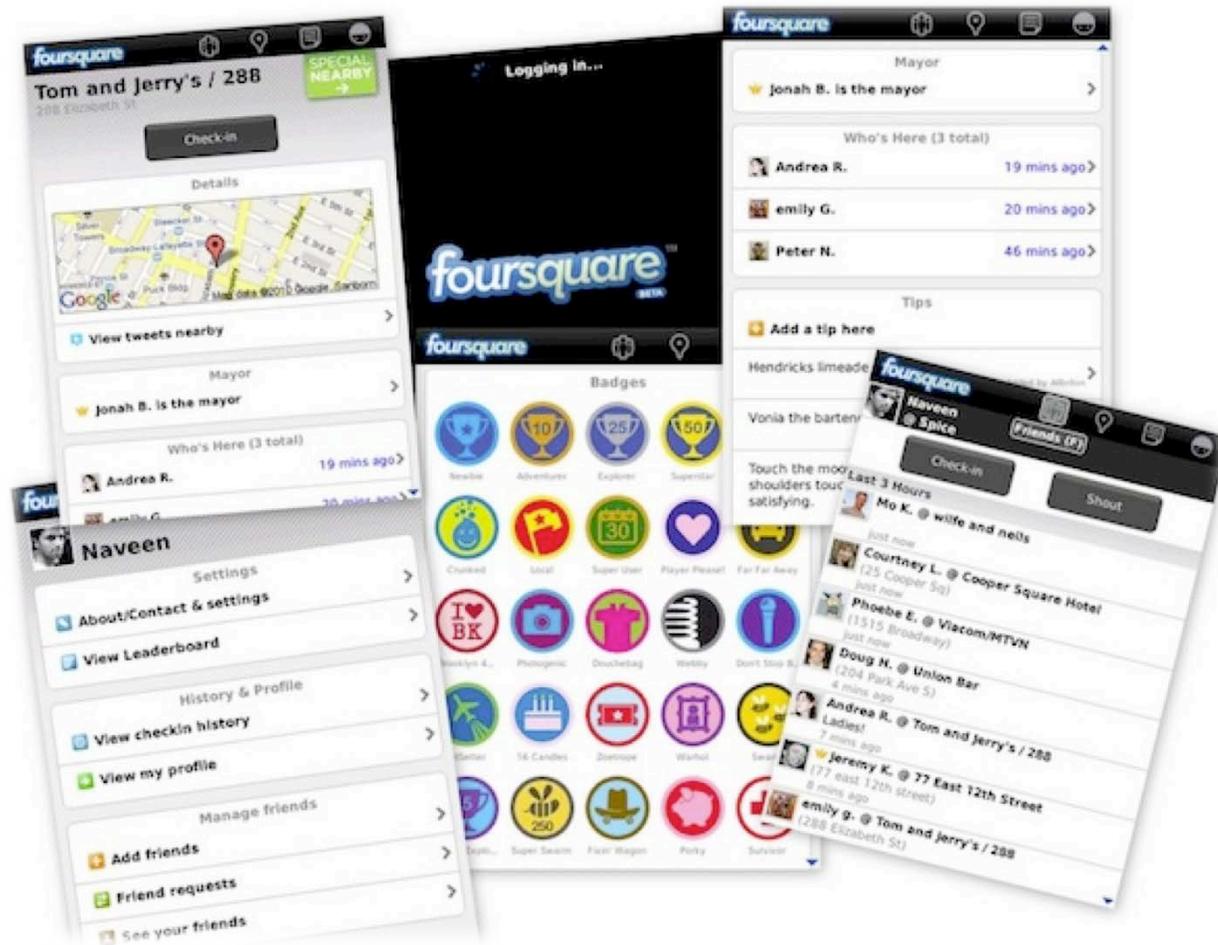
Eat 5 fruits and veggies a day, 5x this week Write a story or poetry 15 min, 3x this week Bike 30 min

Challenges

Summer Smackdown: Week 7 Healthy Hearts 13th place

Badges see all »

Foursquare



Nike+



World Runs

Top 10.

WORLD RUNS MAP

distance: week month ever

duration: week month ever

fastest 5k: week month ever

fastest 10k: week month ever

Last week's totals were calculated on Sunday at midnight GMT. Last month's totals were calculated on the last day of the month at midnight GMT.

RANK	USER	DISTANCE
1	stephenjm55	228.99 km
2	Action_Fitne	134.73 km
3	peejay_m	126.93 km
4	taetae	121.65 km
5	Neville	101.87 km
6	Jomini	74.6 km
7	runoirun	72.91 km
8	j_siopongco	69.48 km
9	NeilLuvMae	66.59 km
10	phyte0450	65.76 km

GENDER: m AGE: 20-29 GEO: PH

...even Al Qaeda

MAY OUR SOULS BE SACRIFICED FOR YOU!
SHAYKH ANWAR AL-'AWLAKĪ



- » EXCLUSIVE INTERVIEW WITH SHAYKH ABŪ BASĪR
- » MAKE A BOMB IN THE KITCHEN OF YOUR MOM THE AQ CHEF
- » ASRAR AL-MUJAHIDEEN 101 TERRORIST
- » THE WEST SHOULD BAN THE NIQĀB

Al-Malahem Media Foundation

Jarret Brachman & Alix Levin, "The World of Holy Warcraft," *Foreign Policy*, April 13, 2011

Who's Gamifying

- Microsoft
- Nike
- SAP
- American Express
- Major League Baseball
- Salesforce.com
- AXA Equitable
- CodeAcademy
- Deloitte
- Samsung
- EMC
- Foursquare
- Stack Overflow
- USA Networks
- LiveOps
- Dell
- Kaiser Permanente
- Foot Locker
- Opower
- eBay
- Cisco
- Recyclebank
- Universal Music
- Siemens
- Yelp
- Nissan
- Verizon

A Big Deal in the Business World

“Suddenly, gamification is the hot new business concept, with many of the world’s most admired companies signing on.”

– Fortune, Oct. 17, 2011

“Striving to make everyday business tasks more engaging, a growing number of firms... are incorporating elements of videogames into the workplace.”

– Wall St. Journal, Oct. 10, 2011

“Many businesses are using these game tricks to try to get people hooked on their products and services — and it is working, thanks to smartphones and the Internet.”

– New York Times, Dec. 23, 2012

Great!

What does it
have to do with

Learning?



Education & Training are Already Games

Bad Ones!

- **Not so much fun**
- **Limited sense of agency**
- **Unclear win states**
- **Back-loaded, limited feedback**
- **Failure to differentiate among player types**
- **Poorly balanced**

Gamifying Learning

The image displays the Khan Academy user interface, highlighting its gamification features. On the left, there are two icons: a clock labeled "Real Time Stats" and a shield labeled "Badges". The main content area shows a user profile for "elizabeth" with various metrics and achievements.

Real Time Stats

Badges

KHAN ACADEMY

Vital Statistics

- Activity
- Focus: Shows how well you've focused on exercises and video playlists. [Take 1 Statistics 1 Unit, 2.0h](#) | [Link to these](#)
- Exercise Progress
- Exercise Progress Over Time

Achievements

- Challenge Patches x 1
- Black Hole Badge
- Sun Badges x 1
- Earth Badges x 5
- Moon Badges x 21
- Mars Badges x 12

elizabeth

Joined 6 months ago

134/298 44/2609 Energy (points)

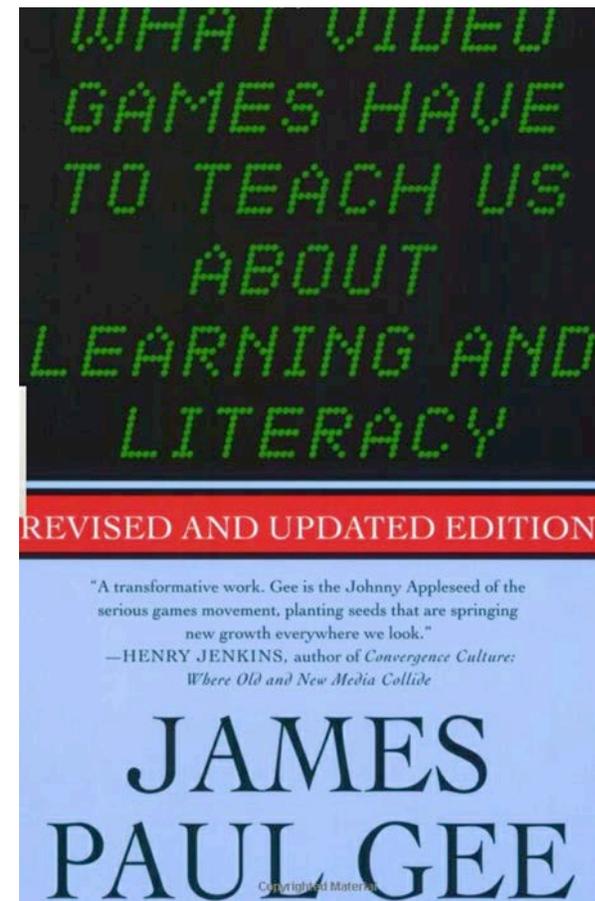
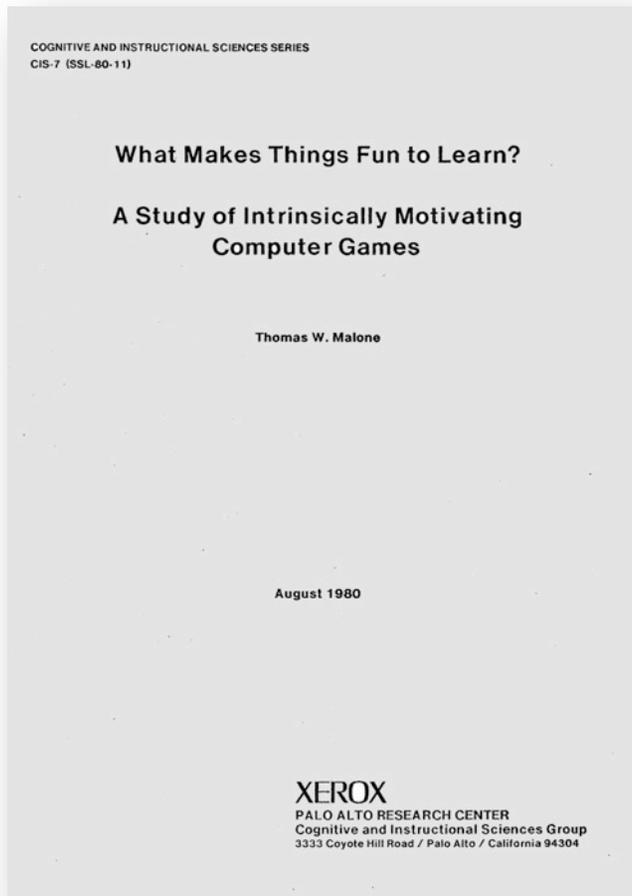
Recent Activity

- Earned **Going Transonic** for Adding and subtracting complex numbers about 22 hours ago
- Earned **Picking Up Steam** for Adding and subtracting complex numbers about 22 hours ago
- Earned **Great Listener** for Algebra I Worked Examples 4 days ago

Gradecraft (Univ. of Michigan)



Not Such a New Idea!



Not New in Business, Either

Turn your visits into rewards.

Earn 1 Star each time you use your Registered Card at Starbucks.

REGISTER
YOUR
CARD

WELCOME LEVEL

5★ = GREEN LEVEL

30★ = GOLD LEVEL



WELCOME LEVEL REWARDS

Free birthday beverage
Free Wi-Fi (2 hours a day)

GREEN LEVEL REWARDS

Welcome Level benefits plus
Free beverage customization
Free brewed coffee refills
Free tall beverage with whole bean purchase

GOLD LEVEL REWARDS

Welcome and Green Level benefits plus
Personalized Gold Card
FREE DRINK EVERY 15 STARS

More to It Than the PBLs



Badges!

Progress Bars!

MileagePlus

UNITED 

Welcome, **[REDACTED]**

MileagePlus Number: [REDACTED]

Mileage Balance: **56,568**

MileagePlus Status: Premier Silver

Star Alliance Status: Silver

Year to Date Premier Miles: 2,512

Year to Date Premier Segments: 1

Lifetime Flight Miles: 93,319

Premier Status Progress



Premier Silver **Premier Gold** **Premier Platinum** **Premier 1K**

- Learn More About Premier Status
- Sign Up for Online Statements
- Print Duplicate MileagePlus Card
- Mileage Calculator

Points!

Rewards!

Levels!

Status!

Airlines

MileagePlus® air travel and upgrade awards
A complete guide to air travel and upgrade awards. With MileagePlus award miles and a world of destinations to choose from, you can reward yourself with a dream vacation.
[Learn more about air travel and MileagePlus Upgrade Awards](#)
[Start your award flight search now](#)

Hotel and car awards

Hotels
Make your travel more rewarding. Use award miles to choose from thousands of hotels worldwide.
[Book now](#)

When you spend...

Headliners
Bid on a wide range of exciting experiences, vacations and more.
[Bid now](#)

Shopping
Use your miles to shop online.
[Shop now](#)

Other ways to use your miles...

Donate your miles
When you donate your award miles, you give much more than award travel—you help people in need.
[See a list of charities and donate now](#)

Buy, transfer or give award miles
Get the extra miles you want, when you want them to get a head start on award travel and more.
[Learn more](#)

All they need are some leaderboards, and users will go crazy!

Bad Design Can Be Dangerous!

Gamification Can Kill

Posted on 23rd March, by Nicole Lazzaro in Uncategorized. 4 Comments



Cubicles are Cages for People

Let's face it, cubicles are cages for people. If the average workplace or school were a zoo, the human society would shut it down for the one simple reason that it fails to provide the mental furniture required for people

<http://www.nicolelazzaro.com/gamification/>

GAME THINKING
CAN REVOLUTIONIZE
YOUR BUSINESS

Gamification

D

esign

1. Define business objectives
2. Delineate target behaviors
3. Describe your players
4. Devise activity cycles
5. Don't forget the fun!
6. Deploy appropriate tools

FOR THE WIN

KEY TAKEAWAYS

game design

Experimentation

Human-centricity

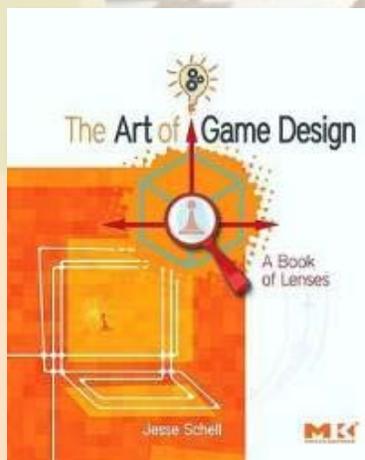
Iteration

Balance

Prototyping

Playtesting

Player modeling



game design

- 1. Get players to play.**
- 2. Keep them playing.**

Feedback

The screenshot shows a LinkedIn profile for Kevin Werbach. At the top, there is a navigation bar with links for Home, Profile, Contacts, Groups, Jobs, Inbox (241), Companies, News, and More. A search bar is on the right with a dropdown menu set to 'People'. The profile header includes a photo of Kevin Werbach, his name, title 'Professor, Technology Analyst, Connector', and location 'Greater Philadelphia Area | Internet'. Below this, his current and previous employers are listed: 'The Wharton School, Supernova Group' and 'TerrorNova Guild, EDventure Holdings, Federal Communications Commission'. His education is listed as 'JD, Law at Harvard Law School'. There are buttons for 'Improve your profile' and 'Edit', and a '500+ connections' badge. A URL 'www.linkedin.com/pub/kevin-werbach/0/0/984' and a 'Contact Info' button are also visible.

Kevin Werbach
Professor, Technology Analyst, Connector
Greater Philadelphia Area | Internet

Current The Wharton School, Supernova Group
Previous TerrorNova Guild, EDventure Holdings, Federal Communications Commission
Education JD, Law at Harvard Law School

Improve your profile Edit 500+ connections

www.linkedin.com/pub/kevin-werbach/0/0/984 Contact Info

Summary

I have served as Counsel for New Technology Policy at the Federal Communications Commission, where I helped develop the US government's approach to the Internet and e-commerce. Subsequently, I edited Esther Dyson's renowned monthly report Release 1.0, and co-organized the PC Forum conference. I then worked as a technology analyst and consultant, advising companies and policy-makers. I'm now on the faculty of Wharton, one of the world's top business schools, while continuing many of my previous work. I helped establish the Obama Administration's technology agenda as a member of the Presidential Transition Team and advisor to the FCC and Commerce Department. Oh, and I've organized the first symposium and first MBA course on gamification. As you can see, I haven't figured out what I want to do when I grow up!

Specialties

90% profile completeness

Complete your profile quickly
Import your résumé to build a complete profile in minutes.

Profile Completion Tips (Why do this?)

- Confirm your current position (+5%)
- Add your skills & expertise (+5%)

Who's Viewed Your Profile?

13 Your profile has been viewed by 13 people in the past 3 days.

12 You have shown up in search results 12 times in the past day.

Kevin's Activity

Kevin Werbach joined the group **Coursera Gamification Course Group**
Join Group · 6 days ago



Kevin Werbach
Professor, Technology Analyst, Consultant
Former Professor (2011 - 2014)

Location: The Wharton School, University of Pennsylvania
Industry: Technology, Public Administration, Government, Policy Communications, Consulting
Education: All Souls College, University of Oxford

View Profile | Add to Network | Send Message

www.linkedin.com/in/kevinwerbach

Summary

Have worked as Director for New Technology Policy at the Federal Communications Commission, where I helped develop the FCC government's approach for the internet and broadband. Subsequently, under Clinton Foundation's auspices, worked with House U.S. and co-organized the FCC Forum conference. Helped launch a technology startup and consultant, advising companies and policy makers. In role on the faculty at Wharton, one of the world's top business schools, while continuing many of his previous work. Helped develop the Obama Administration's technology agenda as a member of the President's Council. Then worked at the FCC and Commerce Department. He has the highest of the nation's and the world's number of qualifications. He can do all of them! (Specialize in what you want to do when you get up)

90% profile completeness

Complete your profile quickly
Import your résumé to build a complete profile in minutes.

Profile Completion Tips [\(Why do this?\)](#)

- Confirm your current position (+5%)
- Add your skills & expertise (+5%)

Where should you post?

- 13 The profile has been shared by 13 people in the past 2 days.
- 12 The profile has been shared by 12 people in the past 2 days.

Recent Activity

Kevin Werbach joined the group [Obama Foundation](#) [View Group](#)

on Nov 17, 2014

 **90% profile completeness**

Complete your profile quickly

 **Import your résumé** to build a complete profile in minutes.

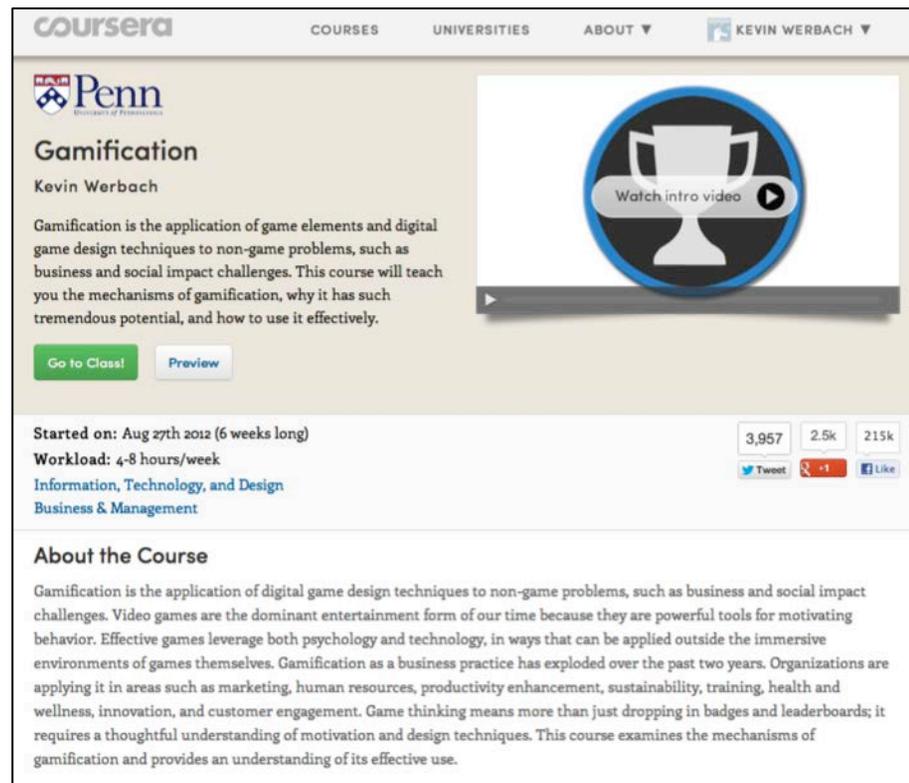
Profile Completion Tips *(Why do this?)*

-  **Confirm your current position** (+5%)
-  **Add your skills & expertise** (+5%)

My Own Experience

Q: How to engage tens of thousands of students from 150+ countries, with no live interaction?

A: Use gamification design principles!



The screenshot shows the Coursera course page for 'Gamification' by Kevin Werbach at the University of Pennsylvania. The page features a video player with a 'Watch intro video' button and a trophy icon. Below the video player, there are buttons for 'Go to Class!' and 'Preview'. The course details include 'Started on: Aug 27th 2012 (6 weeks long)', 'Workload: 4-8 hours/week', and 'Information, Technology, and Design Business & Management'. The page also displays social media sharing options for Twitter, Facebook, and LinkedIn, along with statistics for 3,957 students, 2.5k reviews, and 215k likes.

<https://www.coursera.org/course/gamification>

Stats from Session 1 (Fall 2012)



Gamification

Kevin Werbach

Gamification is the application of game elements and digital game design techniques to non-game problems, such as business and social impact challenges. This course will explore why gamification works, why it has such tremendous potential, and how to use it effectively.

Preview

Session(s):

Apr 1st 2013 (6 weeks)

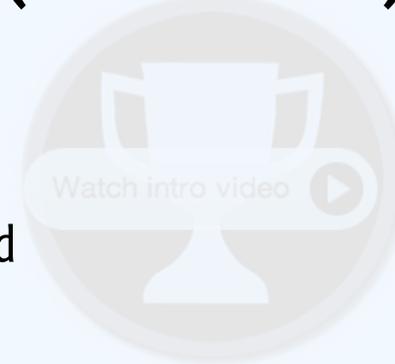
Aug 27th 2012 (6 weeks)

Workload: 4-8 hours/week

About the Course

Gamification is the application of digital game design techniques to non-game problems, such as business and social impact challenges. Video games are the dominant entertainment form of our time because they are powerful tools for motivating behavior. Effective games leverage both psychology and technology, in ways that can be applied outside the immersive environments of games themselves.

- **81,600 registrations**
 - 2/3 non-U.S.; over 150 countries represented
 - 77% of participants not in school/university
- **Massive engagement**
 - >2,200,000 video views
 - 19,513 forum posts
 - 187,028 peer assessments, by 13,088 students
 - Student-formed Facebook group: 3,468 members
 - Hashtag #gamification12: >2,700 tweets

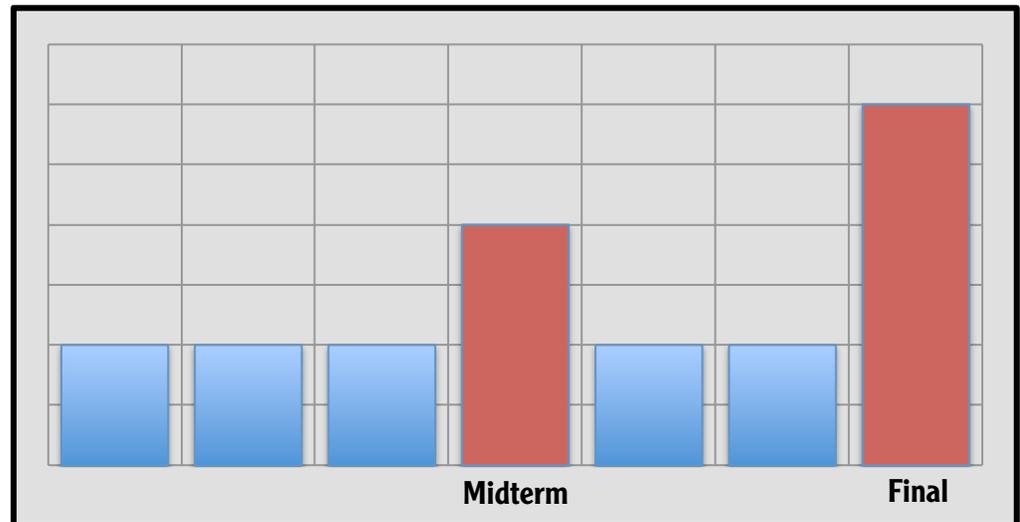
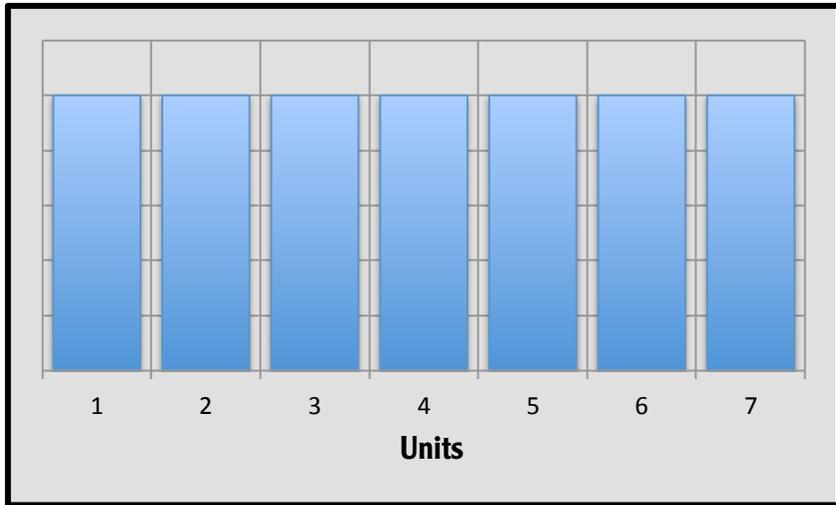


Learning from Games...

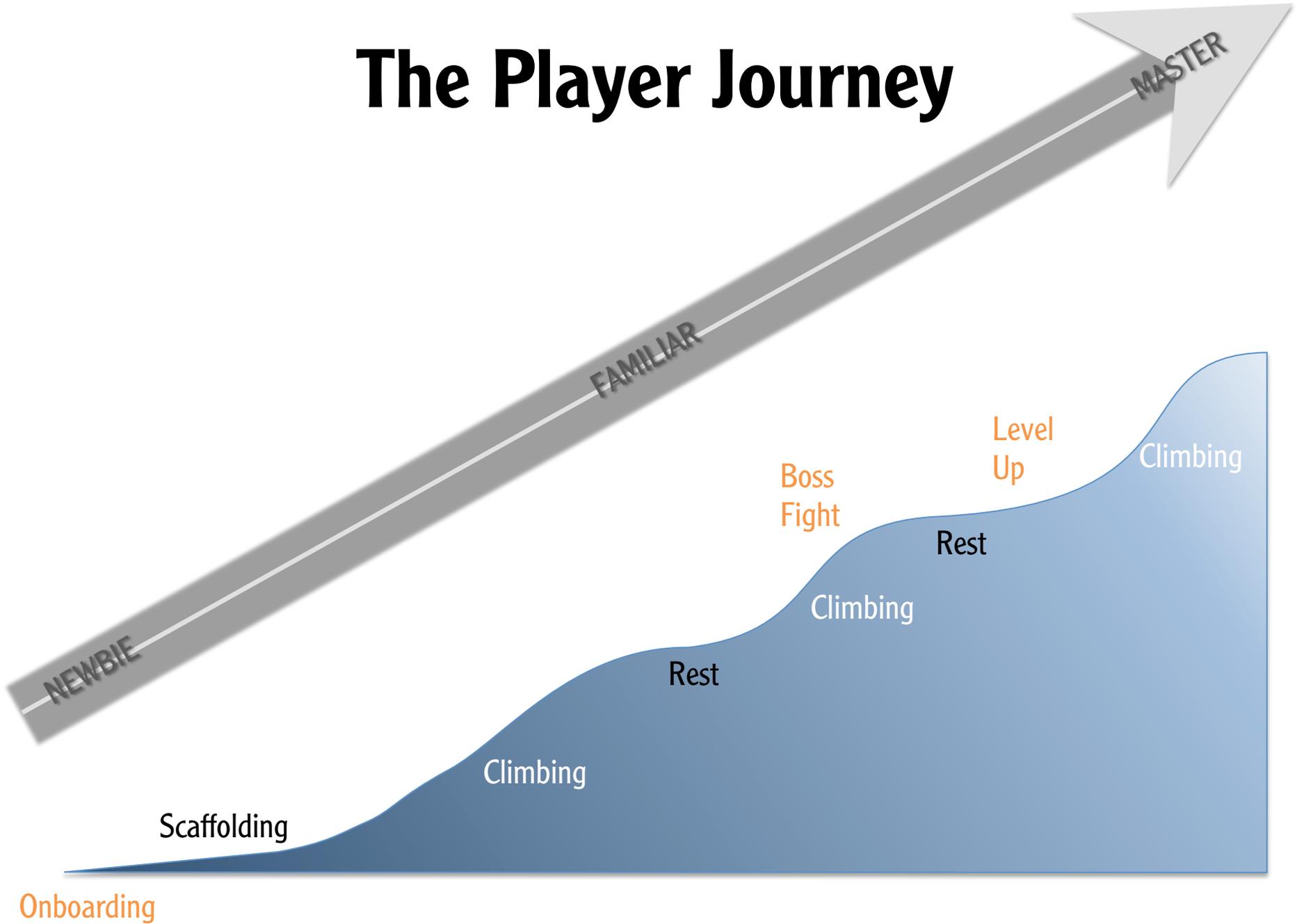


University of Pennsylvania

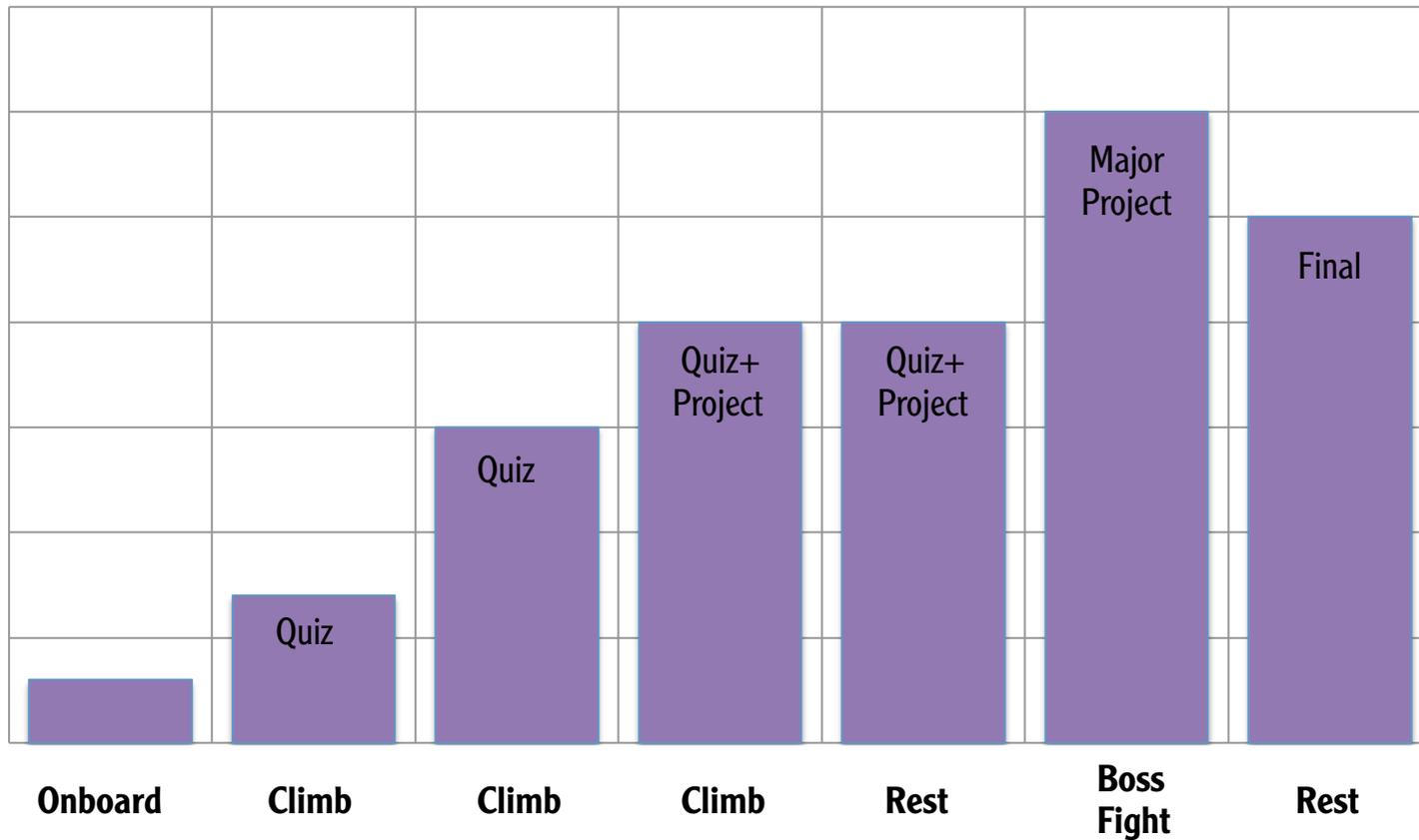
Traditional Course Design



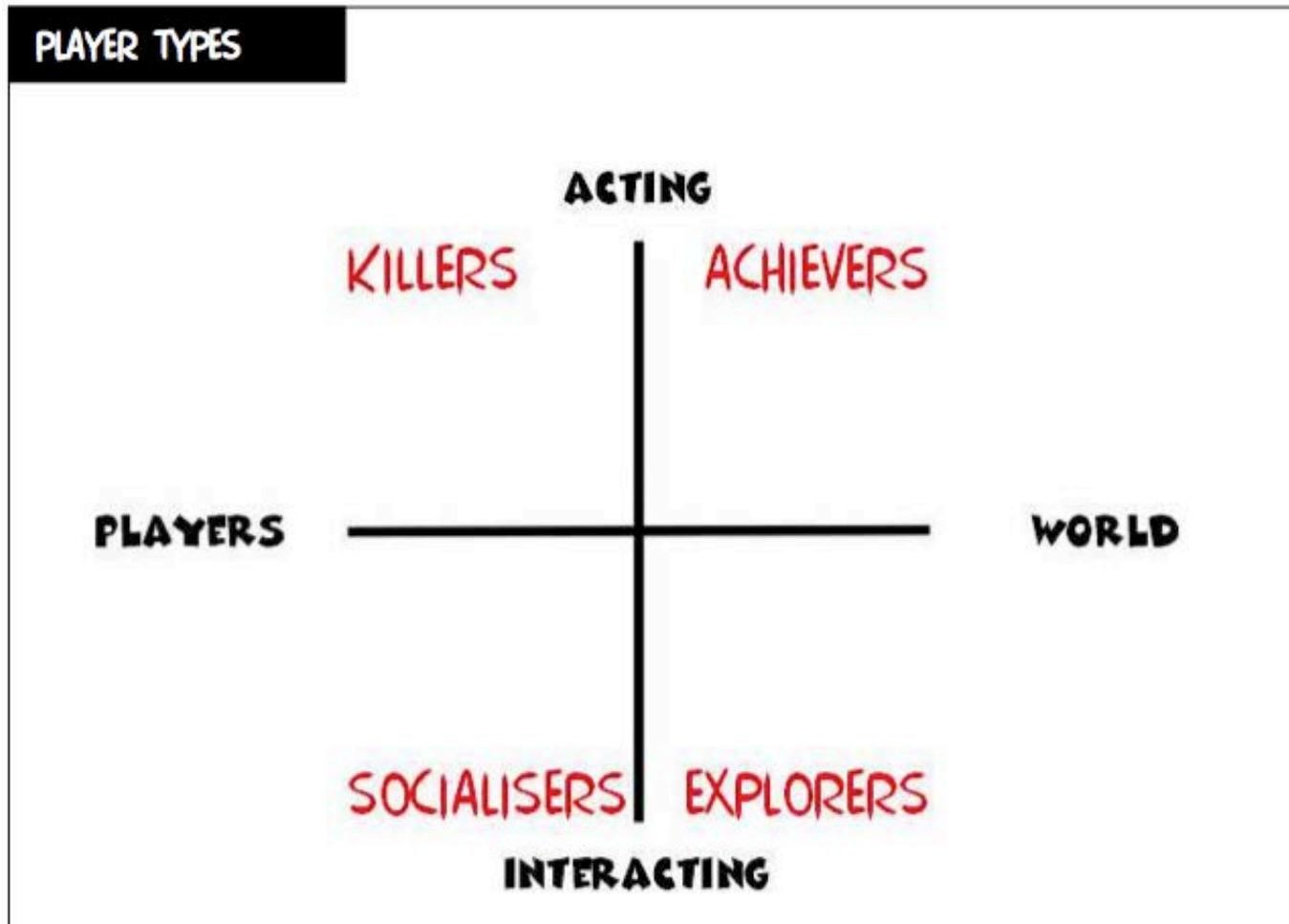
The Player Journey



Gamification Course Design



Player Types



Source: Richard Bartle

Gamification Wiki

This wiki is a collaborative effort by students in Prof. Kevin Werbach's Gamification course on Coursera, starting collection of gamification-related materials on the Internet.

Course-related

- [Notes](#)
- [MindMaps](#)
- [Student blog posts](#)
- [Your photos](#)

Major concepts

- [Gamification](#)
- [Games](#)
- [Game design and game thinking](#)
- [Motivation and Psychology](#)

Resources

- [Popular articles](#)
- [Academic research](#)

Study Groups

Find friends, work together, and arrange meet ups!

Please help all of us experience the best learning environment possible:

- Be friendly and considerate when talking to your fellow students. ([Example](#))
- Use up-votes to bring attention to thoughtful, helpful posts. ([Example](#))
- Search before you post. ([Example](#))
- Post in the appropriate sub-forum. ([Example](#))
- Please flag posts to report inappropriate content or violations of the honor code.

[Start New Thread](#)

Latest activity

[Portuguese Study Group \(Portugal and Brasil\)](#)

Started by [Manuel Lemos \(Student\)](#) · Last post by [Manuel Lemos](#) (3 months ago)

[Bangalore Study Group](#)

Started by [Bibhu Ashish Panda \(Student\)](#) · Last post by [Syed Umar Ahmed](#) (5 months ago)

[Study Group - Greece](#)

Started by [Anonymous \(Student\)](#) · Last post by [Pete MacKichan](#) (5 months ago)

[French study group - Groupe d'Attitude francophone](#)

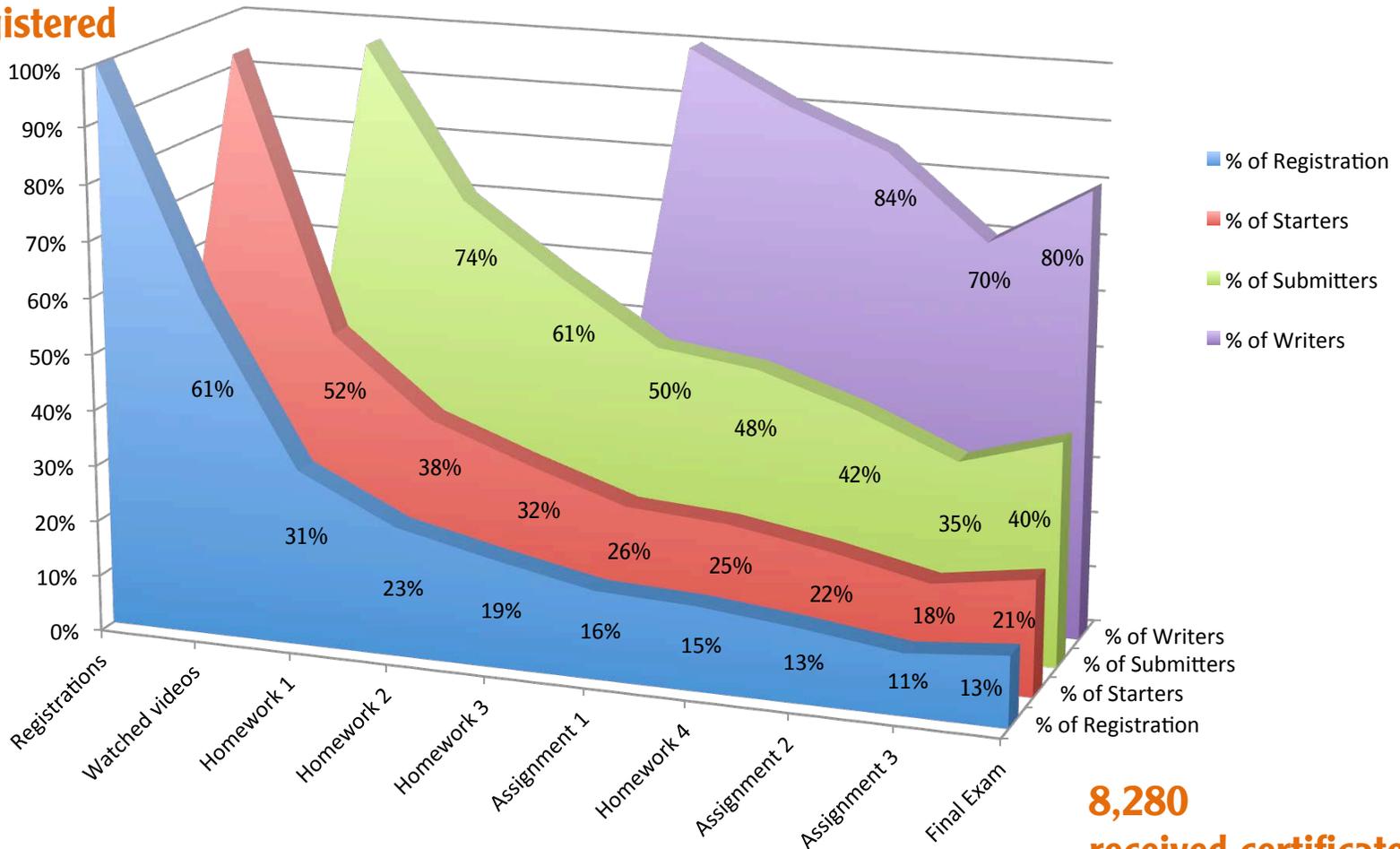
Started by [Frederic Miquel \(Student\)](#) · Last post by [Alexandre FLORI](#) (5 months ago)

Notice any Differences?



2x-4x Typical Completion Rate

≈81,600
registered



8,280
received certificate



Daniel Gomez

@eldanov2

I didn't know grading my
coursemates of #gamification13
was going to be fun!

12:46pm · 17 Apr 13 · web



Carlos Rozo

@crozo



 Follow

Nobody believes I am doing homework while
playing plants vs zombies. @kwerb

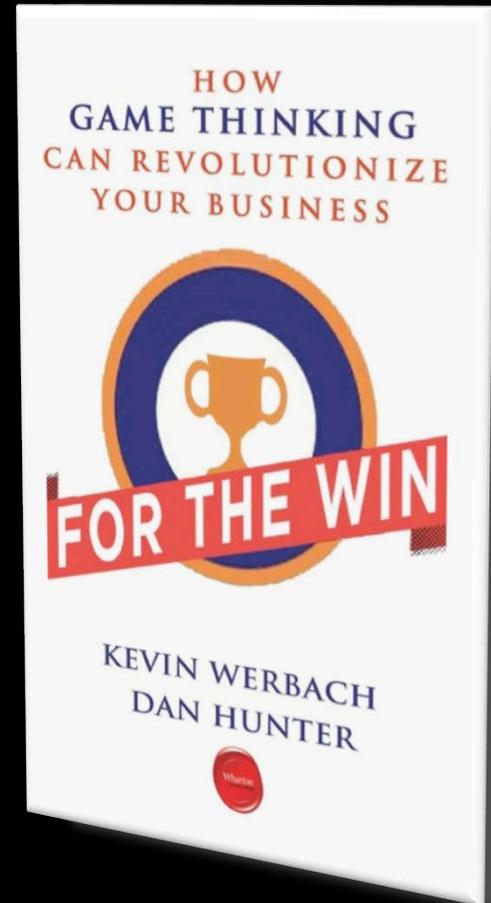
 Reply  Retweet  Favorite  More

3:01 PM - 11 Apr 13

thank you!

Prof. Kevin Werbach

Twitter: @kwerb



<http://wdp.wharton.upenn.edu/books/for-the-win/>