

Microsoft® Research

Faculty Summit

10
YEAR ANNIVERSARY

Agenda

Ken Perlin *NYU, Games 4 Learning Institute*

Chris Franz *Microsoft Learning*

Ross Smith *Windows Security*

Jennifer Michelstein *Office Labs*

Games FOR Learning INSTITUTE

Computer Games and Learning: Best Practices Using Games to Teach- in Academia and at Microsoft

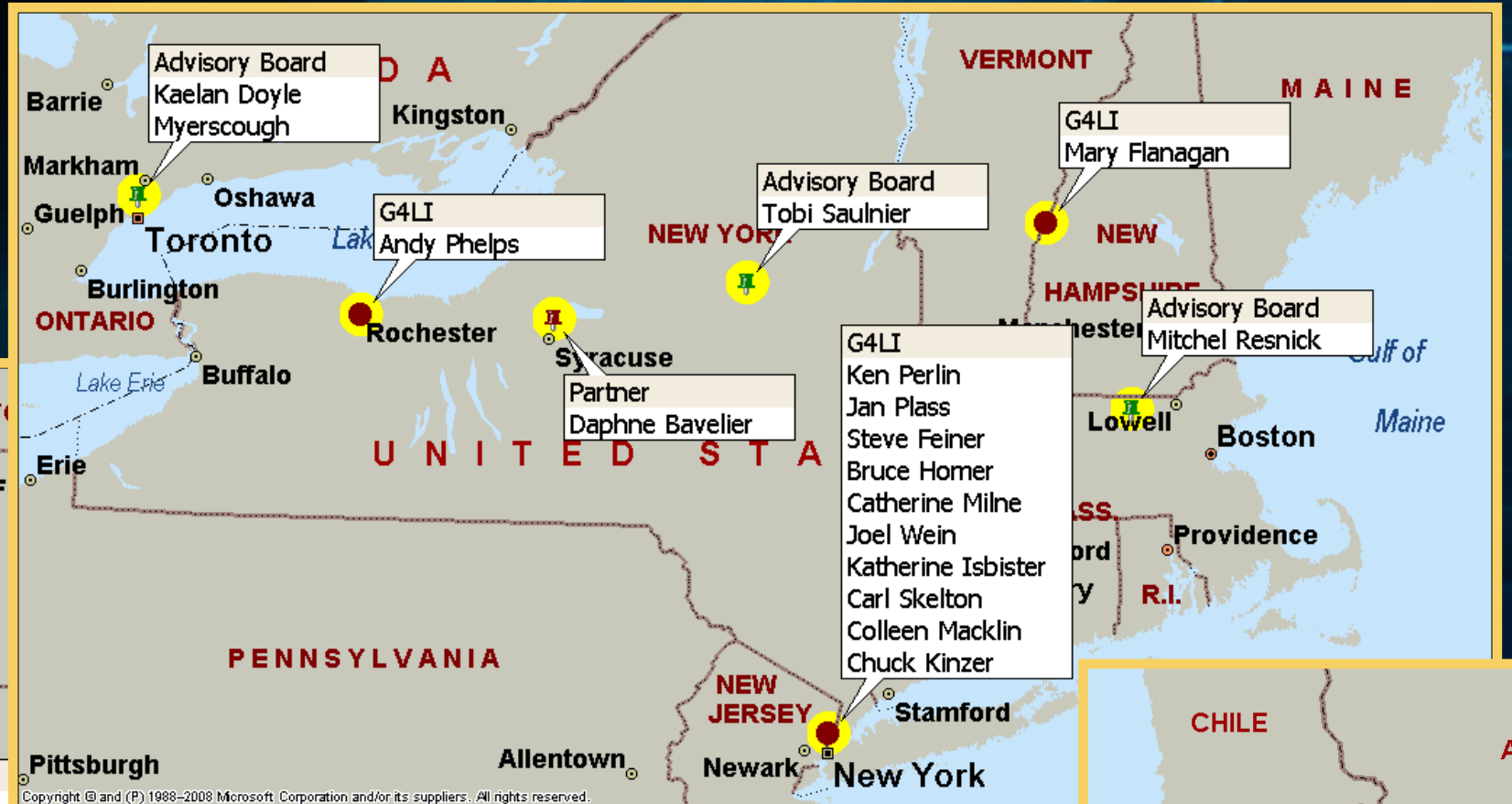
Ken Perlin, Professor
New York University

Games

FOR

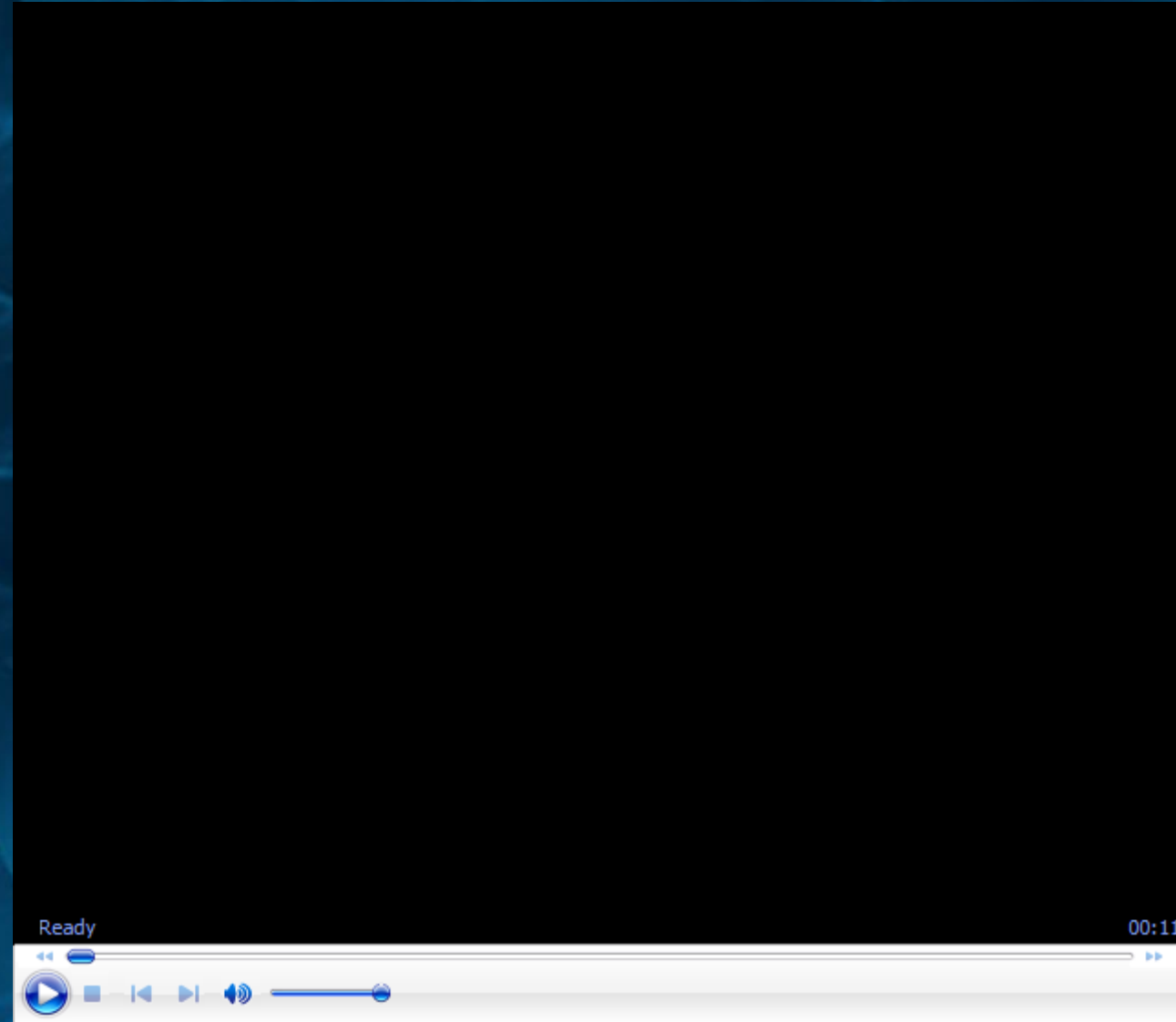
Learning

INSTITUTE

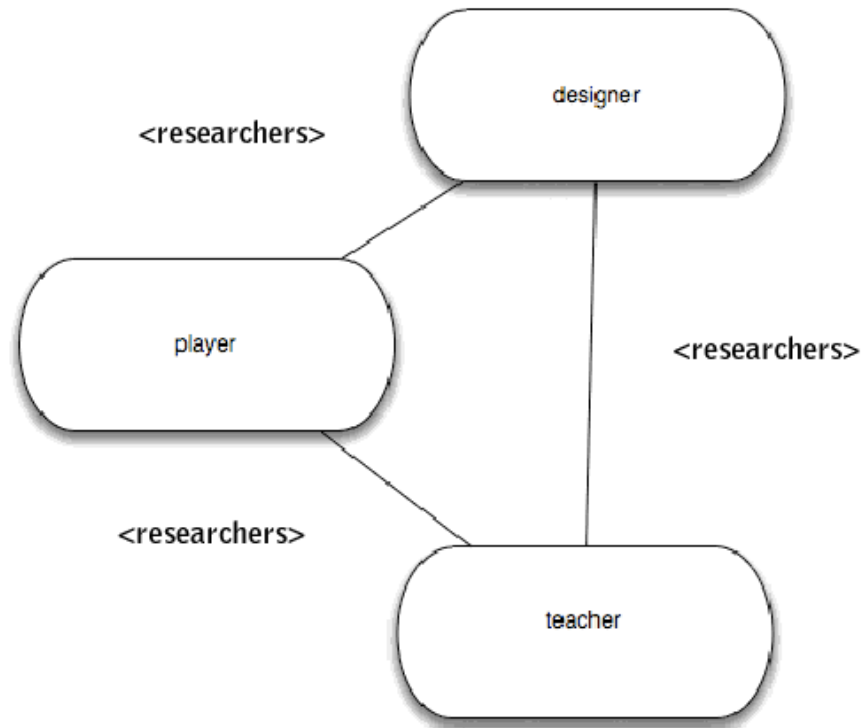


Community Summit

Microsoft
Research



Interviews with the Experts



Who are the experts?

- 40+ Field interviews
- Transcriptions and video analysis to cull insights
- Compiling best practices

Interviews with the Experts

Questions:

- What design patterns/examples of great practices to encourage learning have come up for you when you learned about this project, based upon your experiences ?
- Do you have ideas about how they can best be tested/validated?
- Do you use player personas/play styles in your design work? If so, how?
- What are some big no-no's that we should definitely avoid?
- Are there skills that you think games teach really well? Which ones and why?

Interviews with the Experts

Questions

- What do you see as the role of the teacher in combination with a game for learning?
- How to reproduce what teachers do in educating, in games
- (e.g. providing timely feedback, taking someone's thinking to the next level)? How so?
- What about social setting?
- How do social dynamics change games and learning if at all?
- What about networked social situations (e.g. MMOs)?
- Anything else we should have asked that we didn't?

Tracy Fullerton, USC Interactive Media

“Boring games! Avoid boring games. I tell you I think you should avoid sticking to the tried and true. A lot of people will tell you the exact opposite, they'll say there are amazing game mechanics out there just use them and map them with important content and that's going to be great. I'm not a believer in that. I actually believe that **you're going to have to discover new mechanics** or at least modify existing mechanics if you want to express new ideas. I will just caution you **not to depend too heavily on the tried and true mechanics.**”

Interviews with the Experts

KARHERANA ISAN, DAR, TWOPLY

Cassie Hägler
 Jill Deiner-Danner
 Jane McGonigal
 Adam Dzindolet
 Jeremy Tate
 Elias Zerfke
 Squarer Eiserloh
 Drew Davidson
 Steve Meretzky
 Nick Fortugno
 Tracy Fullerton
 Ian Schreiber

Independent Games Developer, Psychology in Bersity
 Senior research scientist, Center for Child, Family, and Community Research
 AR/VR designer and researcher, Institute for the Future
 Researcher, Center for Children, and Teaching Institute of C.S.
 Music teacher and playtester, Microsoft Game Studios
 Game Designer, DePaul University, Champlain College and Kokoromi
 Games and education researcher and designer
 Michigan State University, Entertainment Technology Center (ETC)
 Game designer, former player
 Creative World of Warcraft player
 Professor, USC interactive entertainment program
 Game designer, Games Fest 2008 Best Student Game winner



Interviews with the Experts

Annika Waern
Researcher and Game
Developer
Swedish Institute of
Computer Science



Jim Diamond
Researcher, Center for
Children and Technology

Dartmouth

Nick Fortugno
CCO, Rebel Monkey

Dartmouth

Jane McGonigal
ARG Designer and
Researcher, Institute for
the Future



Interviews with the Experts

Zack Aikman
Independent Games
Festival 2008 Best
Student Game winner



Cornelia Brunner
Researcher, Center for
Children and Technology



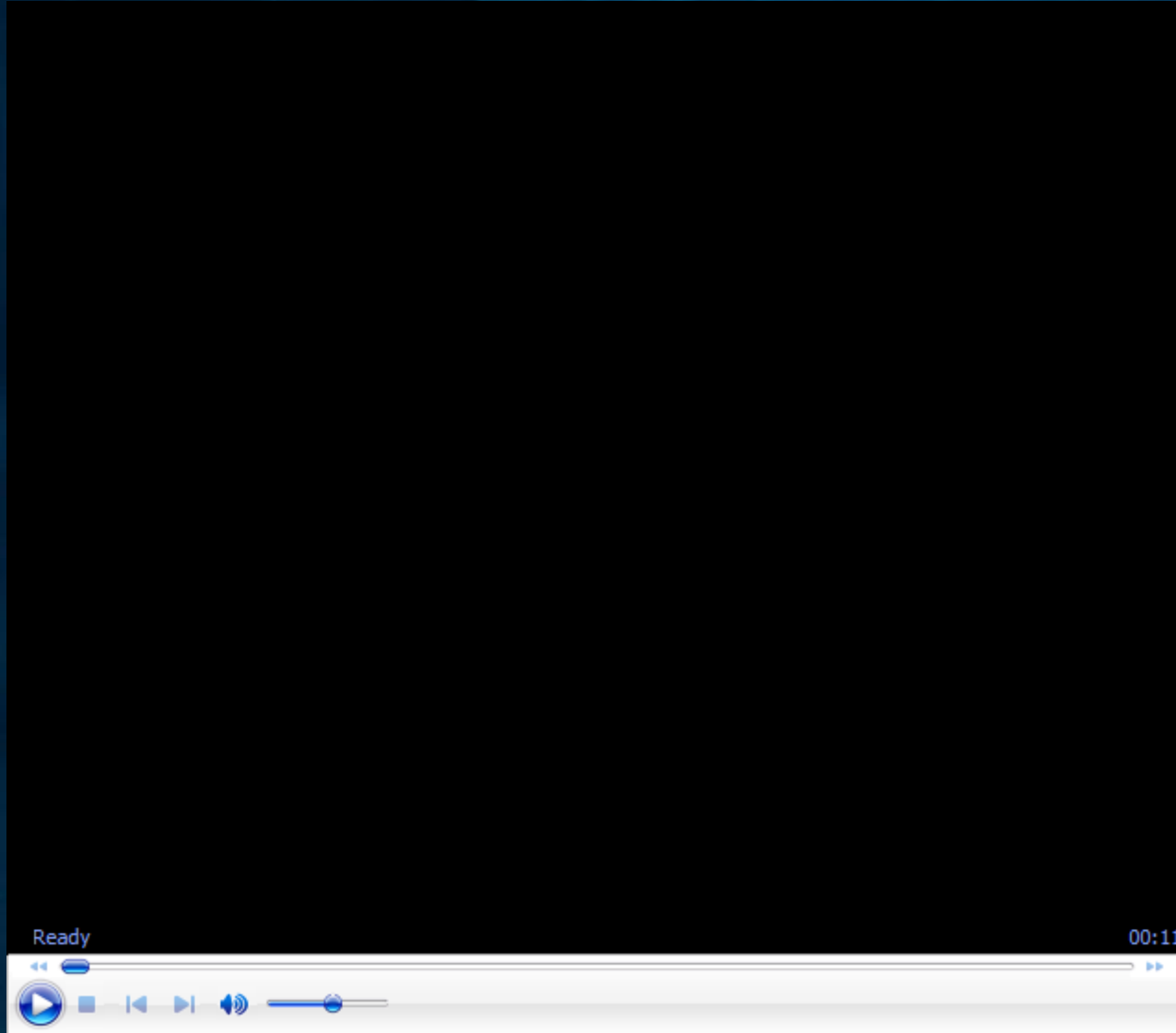
Eric Zimmerman
Game designer and
researcher



Jeremy Tate
Music teacher and
playtester, Microsoft
Game Studios



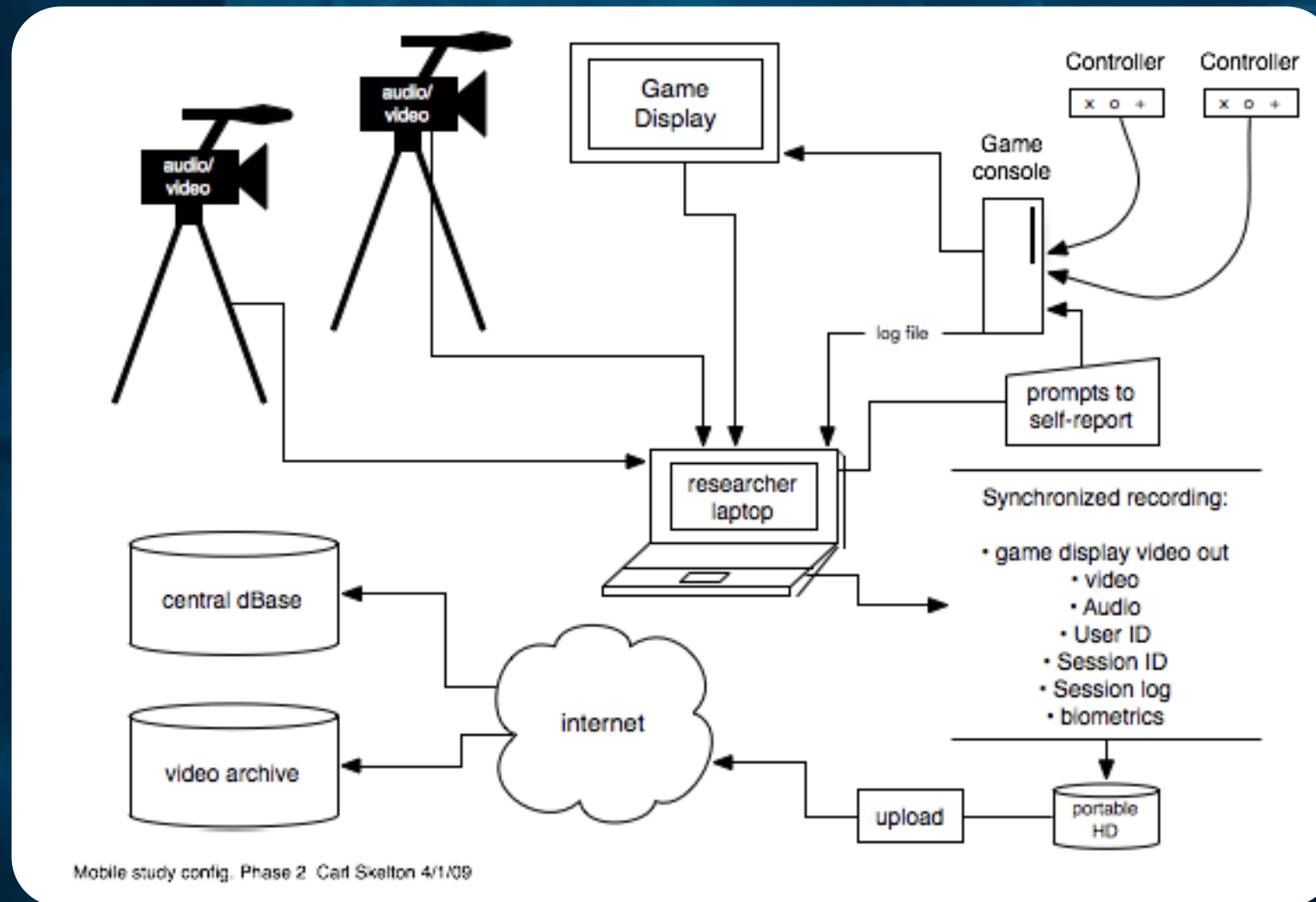
Interviews with the Experts



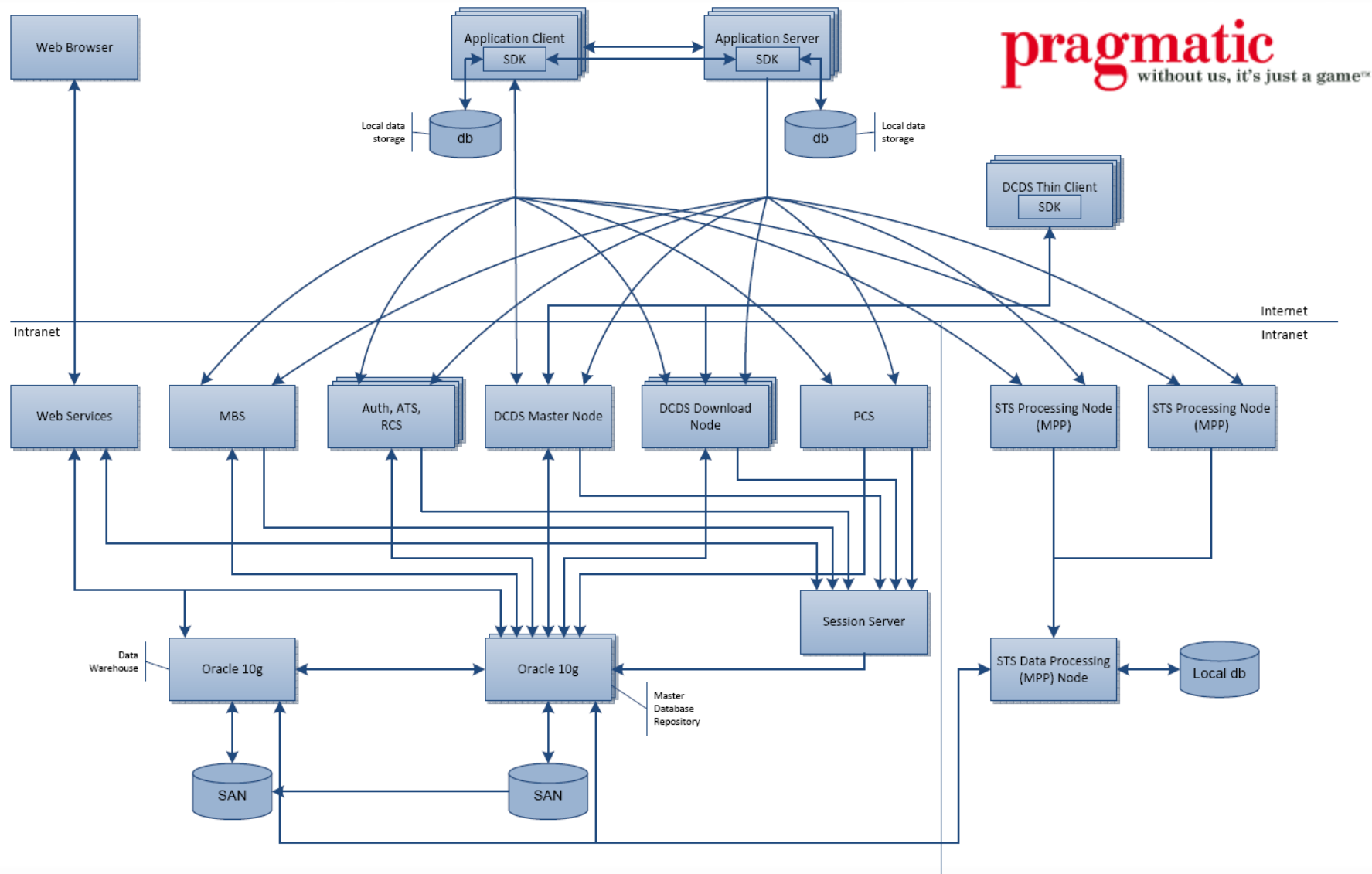
Warren Spector



Game Play Observations

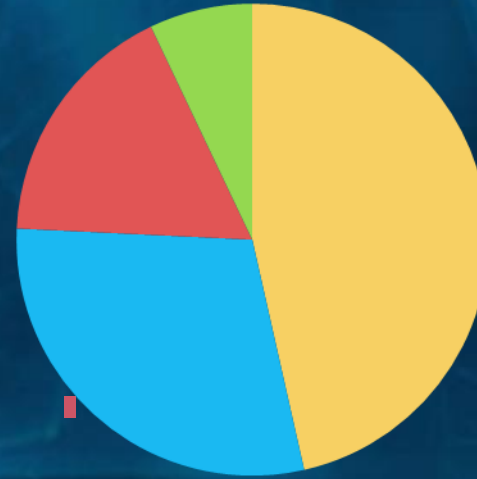


Game Play Observations



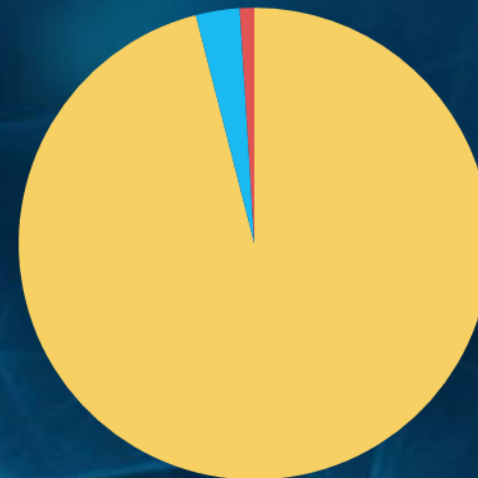
Game Play Observations

I.S. 49 Bertha A Dreyfus
101 Warren St
Staten Island, NY 10304
Richmond County



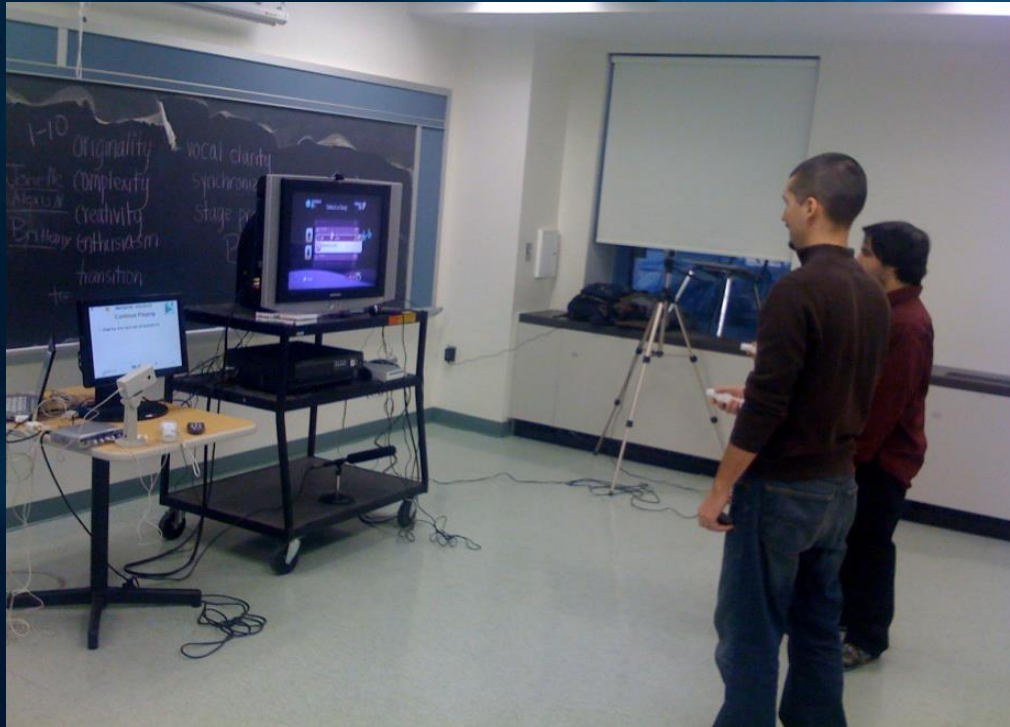
- Black or African American
- Hispanic or Latino
- White

Urban Assembly Institute of Math
and Science
960 Prospect Pl
Brooklyn, NY 11213
Kings County



- Black or African American
- Hispanic or Latino
- White

Game Play Observations



05/11/09
05/07/09

L CH 1


L CH 3



12:38:28
08:46:40

L CH 2

L CH 4

Continue Playing 

- Wait for the next set of questions

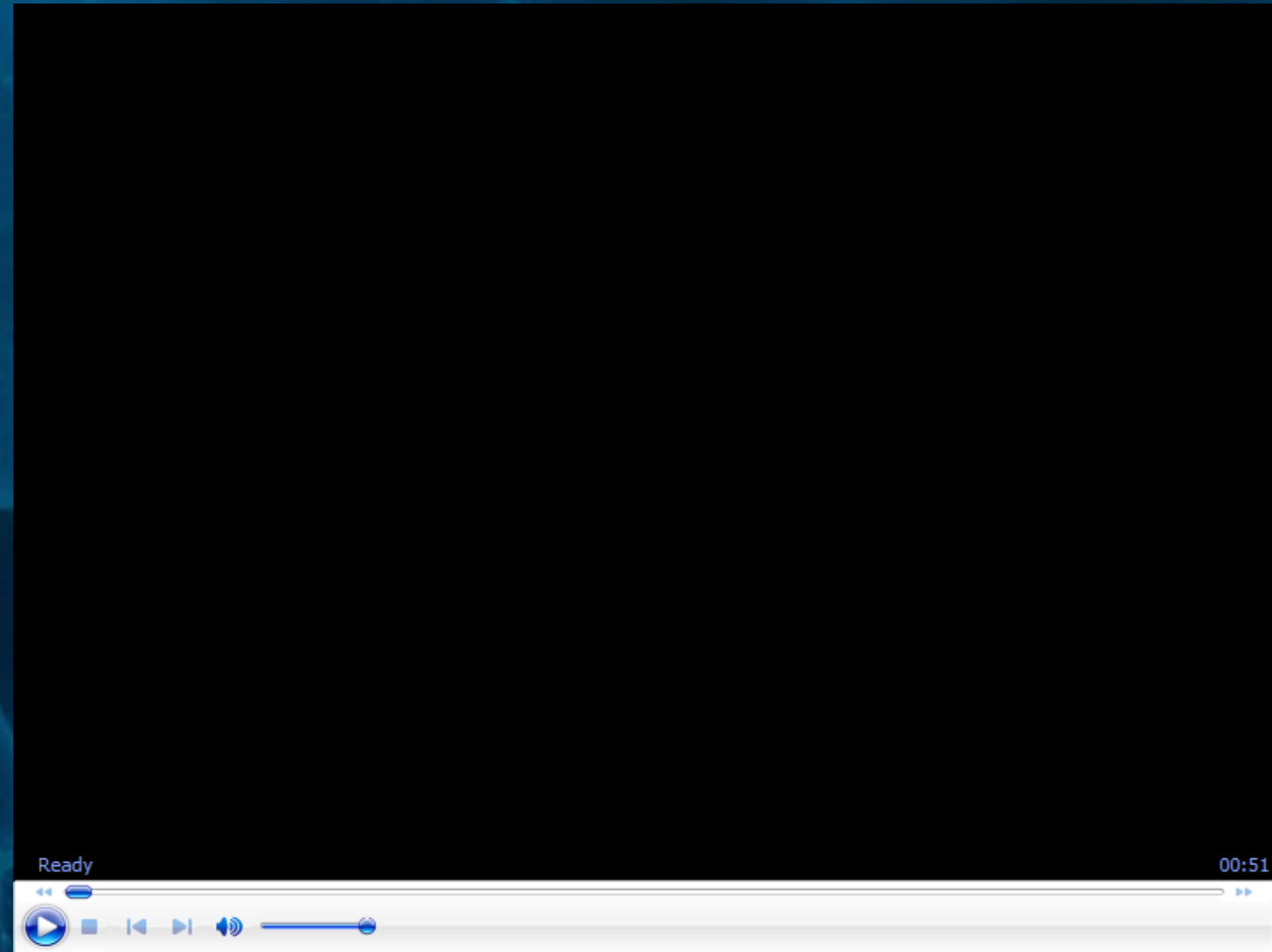
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Design Pattern Candidates

- **Strong Narratives provide sufficient incentive to solve hard puzzles/problem**
(Professor Layton and the Curious Village)
- **Time and resource constraints make games fun and can improve learning**
(World of Goo, Trauma Center)
- **FPS do not automatically provide incentives to learn** (Dimension M) (Tribalwars)
- **A social component (collaboration, competition) makes games fun/engaging**
(Little Big Planet, World of Goo, Tribalwars, Wii Music)
- **Different levels of incentives (e.g., based on player statistics) increase fun and engagement**
- **Kids will engage in rote tasks for small incentives when it leads up to larger incentives later**
- **Scaffolding can be used to make games adaptive to learners' specific needs (prior knowledge, abilities, ...)**
- **Games can be engaging, even addictive, without being always fun**
- **The stronger the intrinsic motivation of the game content the less extrinsic motivation is required to engage players**

XNA Game Development



XNA Game Development

2009 Game Development 2nd Place



Dartmouth



Press Enter to view the help screen.

TIME: 45
WASTE: 22538
+60.3/sec

CASH: \$299
+0.3/sec

Income: +90.0
18 * 5.0

Upkeep: -85.7

Research: -4.0

- Graphite Fuel
- Air Mining
- Aerovergence
- Gyropower
- Hydrothermal
- Nitrogen Cells: -4.0

BUILD

SELL

Use the above buttons to create or sell power plants.

TECHNOLOGIES

- Graphite Fuel I**
Waste: 14.7 Upkeep: 1.3
Bad Prospects
- Air Mining I**
Waste: 13.4 Upkeep: 1.1
Good Prospects
- Aerovergence I**
Waste: 5.7 Upkeep: 4.4
Bad Prospects
- Gyropower I**
Waste: 6.1 Upkeep: 5.4
Regular Prospects
- Hydrothermal II**
Waste: 0.7 Upkeep: 7.0
Bad Prospects
- Nitrogen Cells V**
Waste: 0.4 Upkeep: 4.6
Regular Prospects

XNA Game Development

Algorithmic Ideas Relating to Scheduling and Resource Allocation in Operating Systems. We're talking about a game in which students have to schedule tasks in ways that correspond to simple CPU scheduling. DinerDash is a good example of the genre, although it does not illustrate the principles we'd like to teach. If we can get students to understand the differences between different simple scheduling policies we can pre-teach a good deal about how modern computers actually work.

We are also thinking about games through which we can teach students about simple issues in coordination in distributed systems, such as leader election, mutual exclusion, and byzantine agreement. These sound fancy but they can be presented in very simple and compelling ways and give young learners insight into the underpinnings of distributed systems.

Computer Games and Learning: Best Practices Using Games to Teach- in Academia and at Microsoft

Chris Franz
SR. UX Lead
Microsoft Learning

Microsoft Learning Introduction

- Provides Training and Certification on Microsoft Products & Technologies
- Offers a variety of ways to learn: Classroom training, e-learning, e-ref, virtual classroom, virtual labs
- Reaches broad set of customers
 - Over a million unique users come to the Learning site per month
 - Over 500K courses are activated and taken every year
 - Over 2000 hours of online training available
 - Content is globally available in multiple languages
- Drives high customer satisfaction
 - eLearning customer satisfaction among the highest in various Microsoft online properties (Typically 5+ points higher than most properties)
 - eLearning drives significant improvement in satisfaction with MS products

Why Games in Learning?

Every month, an estimated 200 million consumers play casual games online, many of whom do not normally regard themselves as gamers, or fans of video games.



50% of all Americans and 75% of American heads of household play computer and video games



Kids aged 8 to 18 spend about 50 minutes per day playing video games



Average adult male spend 7.6 hours per week playing video games



Average adult female spends 7.4 hours per week.

Key Challenges with Games in Technical Training

- Learning Effectiveness
 - How effective are games in technical training?
- Blending fun with learning
 - Fun as a priority
 - At least three game elements in every level
- Cost, “Time to market” and Scale
 - Can we create low cost games?
 - Can we create them in cycle times less than 12 weeks?

Our Goals for Learning Games

Adventure/Role Playing Games

- Conceptual grounding
- Gateway into deeper learning
- Quick, fun way to learn in 10 minutes or less

Quiz Games

- Prep for certification
- Learning through trial and error
- Quick, fun way to learn in 10 minutes or less

Green IT Challenge

demo

Chris Franz
SR. UX Lead
Microsoft Learning

Quiz

demo

Chris Franz
SR. UX Lead
Microsoft Learning

Where's MSL Heading with Learning Games? Microsoft Research

- Release scheduled for August 2009
- Rich interactive scenario-based games will be ubiquitous in Microsoft training content
- MSL Games will be created by everybody, reviewed by the community and will address serious learning needs

The screenshot displays the Microsoft Learning website interface. At the top, it says "Microsoft Learning" with a search bar containing "Microsoft Learning" and a "Go" button. Below the search bar is a navigation menu with links for Home, Training, Certifications, Special Offers, Community, Member Sites, and Help & Support. The main content area is titled "Microsoft Learning Game Space" and features a banner image with three stylized characters. Below the banner are three featured game cards: "Are You Certifiable?", "Green IT Adventure Game", and "Hyper V Mega Sort". Each card includes a small image and a brief description. To the right of the main content area, there are two "Title Goes Here" placeholder boxes, each containing five "Link Text Goes Here" placeholders. At the bottom right, there is a promotional banner for "Office Live Small Business" with a "Get started FREE" button. The footer contains social media links for Delicious, Digg, Technorati, and Slashdot, along with a "Manage Your Profile" link and a copyright notice for Microsoft © 2009.

Productivity Games

Ross Smith
Director of Test
Windows Security

Generation Gap

- Larger Generation than Baby Boomers
- Most Tech-Savvy Generation
- Most “Gamer” Generation*
 - 50% of All Americans Play Video Games
 - 81% of All Business People 34 and Younger have Played Video Games

* Got Game, Wade, Beck, Harvard Business School Press

Games and Work

- Engagement
- Morale
- Trust
- Productivity
- Innovation



Games Don't Succeed Everywhere

	Employee Skills		
	Core	Unique	Expanding
In-Role Behaviors			
Organizational Citizenship Behaviors			

Games Don't Succeed Everywhere

	Employee Skills		
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Organizational Citizenship Behaviors			

Language Game - Problem Space

- Windows ships in about 100 languages
- Windows has thousands of user interface dialogs
- Windows developers do NOT speak every language

How do we effectively validate the quality of the translation?

“It’s pretty addictive once you start playing so maybe you need a health warning on the homepage!”

-John

“...this adds even more motivation to my passion in contributing to the quality of our products!”

-Tigran

the
Language
Quality
Game

“It’s really cool! ...a very innovative and fun way to improve loc quality. “

-Dean

demo

References

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www.42projects.org
- Productivity Games Blog
productivitygames.blogspot.com
- London Business School case study
<http://www.managementlab.org/files/site/publications/labnotes/mlab-labnotes-010.pdf>
- Changing the Game
www.changingthegamebook.com/
- The Economist
http://www.economist.com/daily/columns/businessview/displayStory.cfm?story_id=11997115

Computer Games and Learning

*Best Practices Using Games to Teach-
in Academia and at Microsoft*

Skill Tracker from Office Labs

Jennifer Michelstein
Program Manager
Office Labs

Discoverability

- Grossest oversimplification you'll hear today
 - Office has lots of great features...
 - that some people don't know about
- This isn't a statement you hear about games
- What can we learn from games, and apply to productivity software?

Skill Tracker explores:

- Can elements of game play, added to Office,
 - Motivate people to explore more of the app
 - Increase their satisfaction
 - Increase their productivity
 - Increase their perceived value of the app
 - ...without being a distraction?

With Productivity Software

- Some elements of game play are off-limits...
 - Limiting functionality until earned
 - Sabotaging other players

DEMO

Early Learnings

At Microsoft:

- “Addictive”
- “Wow! I didn’t know I could do that in Word!”
- “I want to know my manager’s score. Who’s winning?”

In external focus groups

- “I don’t want my manager to know my score. I don’t want my job to be replaced by someone with a higher score.”
- “If my score is high enough, I’d want it on my resume.”
- “I’d feel better playing this at work instead of Solitaire.”

Skill Tracker

demo

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Your potential. Our passion.™