

# Games in Education: Introductory Concepts

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What Is A Game?

## Formal Definition of **Play** (Salen & Zimmerman)

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"Play is free movement within a more rigid structure."

Salen, K. and E. Zimmerman, Rules of Play : Game Design Fundamentals. The MIT Press. (2003)

## Formal Definition of **Game**

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"A game is a system in which players engage in an artificial conflict, defined by rules, that results in a quantifiable outcome."

What Is A (Good) Game?

One of The Best Videogames of All Time: *Pitfall*

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## One of The Worst Videogames of All Time: *ET*

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## Games and Boredom (Koster)

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| When Players Say...             | ...They Mean  |
|---------------------------------|---|
| The game is too easy            | Game patterns are too simple  |
| The game is too involved        | Players are uninterested in the information required to detect patterns |
| The game is too hard            | Patterns are perceived as noise   |
| The game becomes too repetitive | New patterns are added too slowly                                       |
| The game becomes too hard       | New patterns are added too fast   |
| The game runs out of options    | All game patterns are exhausted   |

## Successful Games

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| Include These Items...                | ...To Avoid                                   |
|---------------------------------------|---|
| Preparation before challenges         | Results due to pure chance                    |
| A sense of a game space               | The perception of the game as trivial         |
| A solid core mechanic                 | The game not being perceived as a game at all |
| A range of challenges                 | The game being exhausted too quickly          |
| A range of required abilities         | The game being perceived as simplistic        |
| Skill in using the required abilities | The game being perceived as tedious           |

## Three More Key Items for Success

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| You Need to Have...   | ...Because   |
|---|--|
| Variable feedback   | Players like to see greater skill result in greater rewards              |
| A way to accommodate beginners and experts playing together | You don't want to see beginners get clobbered, and experts "bottom feed" |
| A definite cost for failure                                 | Players feel cheated by "never-lose" games                               |

# Videogames and Learning

## Active Learning (Gee)

Gamers Learn From:

1. Doing and reflecting critically



The screenshot shows a medieval strategy game interface. On the left, a detailed panel for the Austria region is displayed. The panel includes the following information:

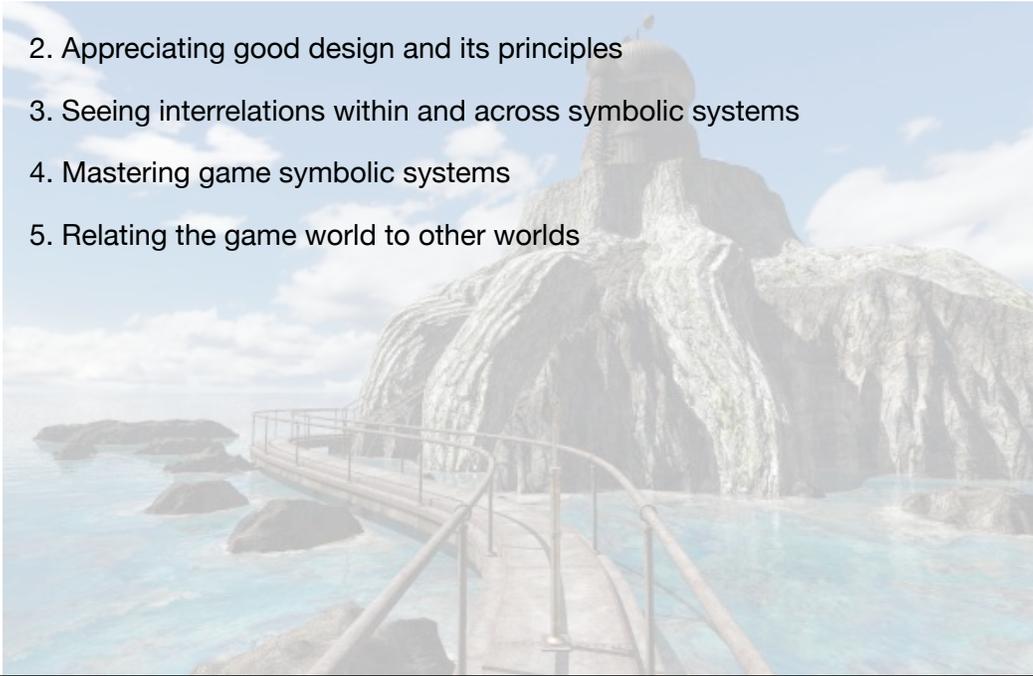
- Austria** (Region #12, 167)
- MONARCH(Emperor):** Friedrich V
- STABILITY:** +3
- LAND:** Late Medieval (3)
- NAVAL:** Late Medieval (2)
- CULTURES:** german, magyar, czech, slovak

The main map shows various regions including ANSBACH, OST MARCH, PRESBURG, MAGYAR, STEIERMARK, ODENBURG, VENETO, KRAJ, CROATIA, BOHemia, and ROMANIA. The date is May 28, 1463. The top status bar shows resources: 1 gold, 40 wood, 6 food, 0 stone, +3 power, 15 population, and 526 gold.

Gee, J.P., What Video Games Have to Teach Us About Learning and Literacy. Palgrave Macmillan. (2003)  
Prensky, M. "Escape from Planet Jar-Gon Or, What Video Games Have to Teach Academics About Teaching and Writing." On The Horizon, Volume 11, No. 3 (2003)

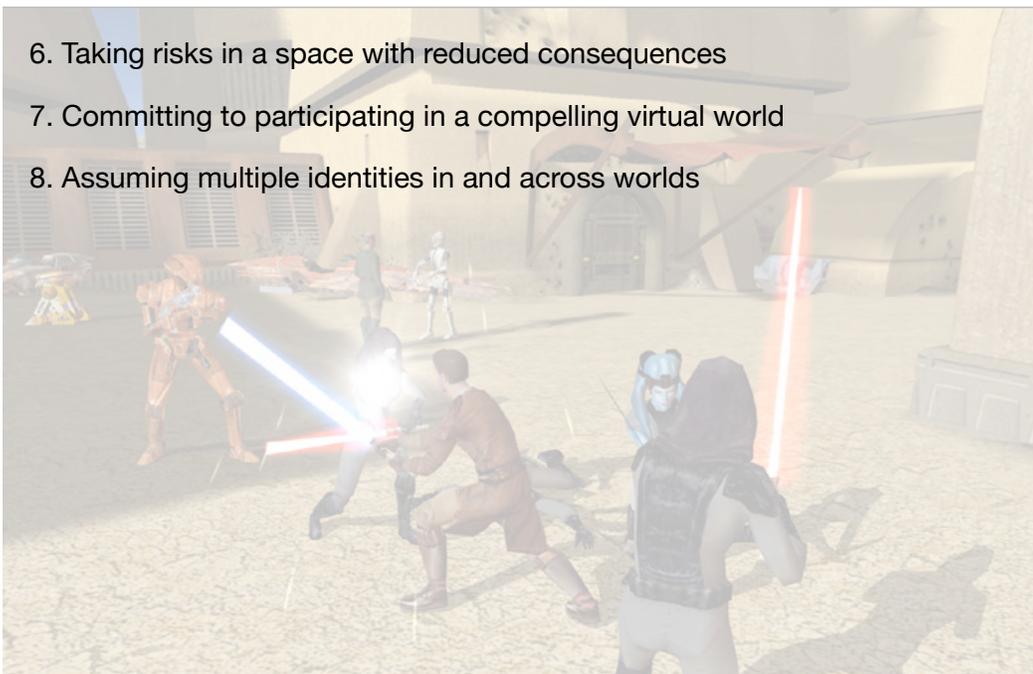
## Symbolic Systems

2. Appreciating good design and its principles
3. Seeing interrelations within and across symbolic systems
4. Mastering game symbolic systems
5. Relating the game world to other worlds

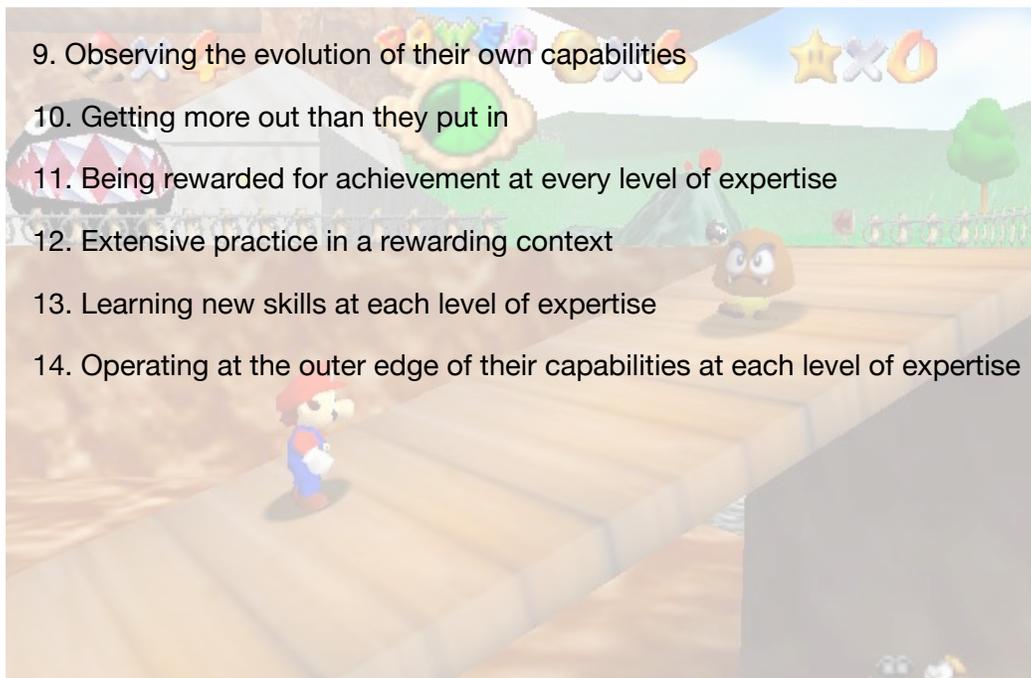


## Worlds and Identities

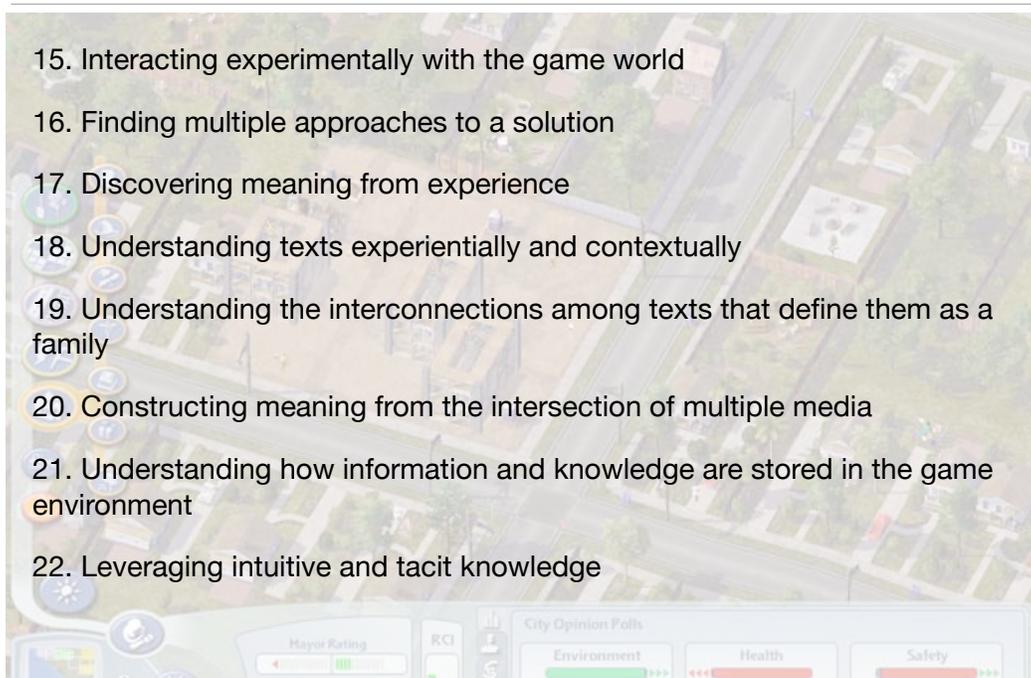
6. Taking risks in a space with reduced consequences
7. Committing to participating in a compelling virtual world
8. Assuming multiple identities in and across worlds



## Development of Capabilities

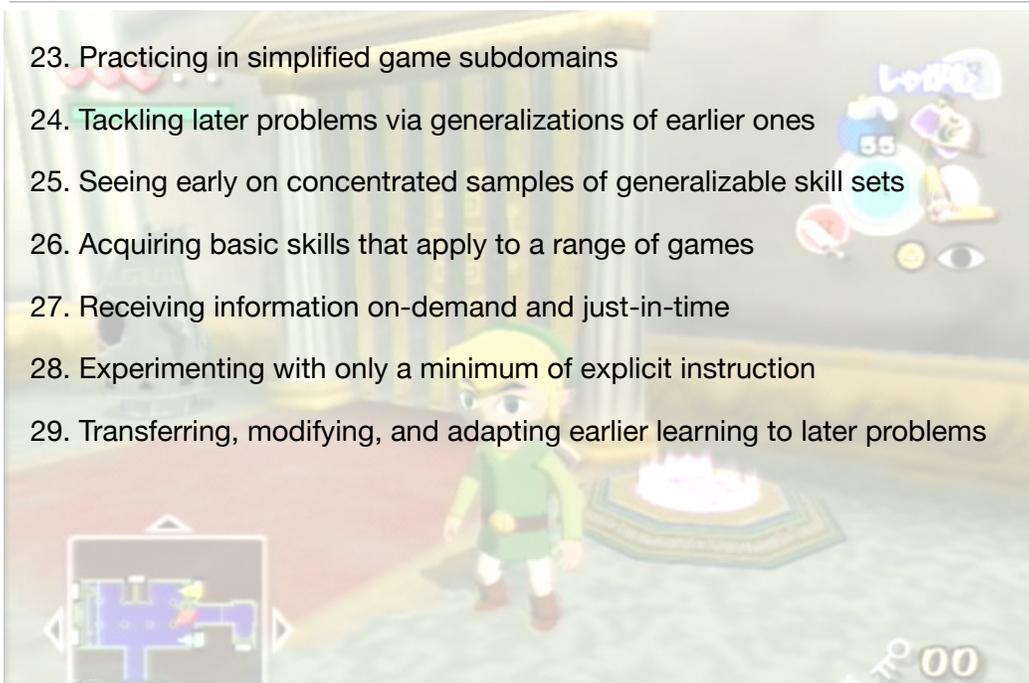


## Experiential Learning



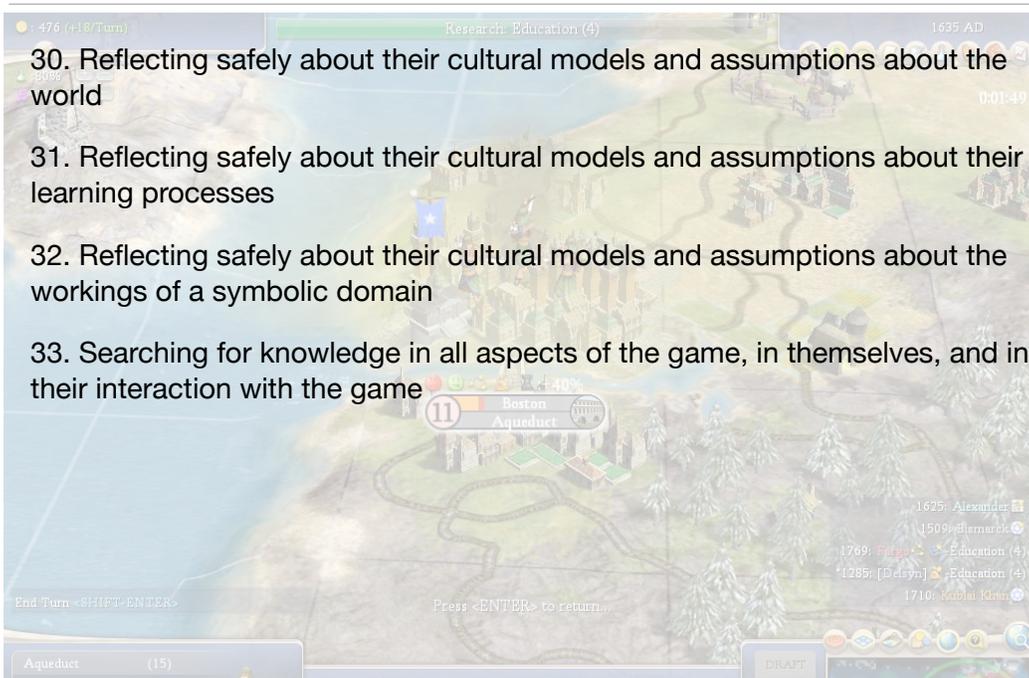
## Developing Skills

23. Practicing in simplified game subdomains
24. Tackling later problems via generalizations of earlier ones
25. Seeing early on concentrated samples of generalizable skill sets
26. Acquiring basic skills that apply to a range of games
27. Receiving information on-demand and just-in-time
28. Experimenting with only a minimum of explicit instruction
29. Transferring, modifying, and adapting earlier learning to later problems



## Cultural Models

30. Reflecting safely about their cultural models and assumptions about the world
31. Reflecting safely about their cultural models and assumptions about their learning processes
32. Reflecting safely about their cultural models and assumptions about the workings of a symbolic domain
33. Searching for knowledge in all aspects of the game, in themselves, and in their interaction with the game

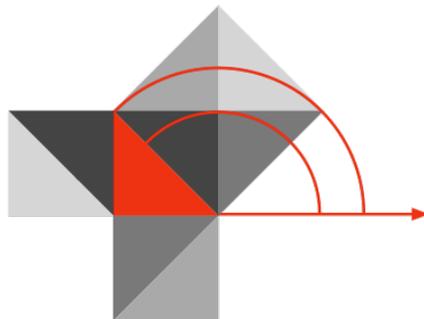


## Community

- 34. Sharing their knowledge with other players
- 35. Forming a distinct community via shared interests in the gaming world
- 36. Teaching others and modifying the game experience



## Hippasus



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