Why do educational games matter?

Lessons Learned at the Cornell Lab of Ornithology

JEFF SZUC, MYA THOMPSON, NOAH WARNKE
Learning Objectives

➔ Birds evolved from dinosaurs
➔ Key flight adaptations are wing feathers and powered flight
➔ Change happens over generations
➔ Evolution is ongoing
Game Design

➔ Make challenges well matched to adaptations
➔ Create physics so player can feel mobility change
➔ Offer educational text in effective places
➔ Create future mode offering control over adaptations
Lessons Learned

→ A fast-paced side-scrolling platform game is a good match for evolutionary theme—it effectively motivates journeys through time and space.

→ With changing physics for each creature, it can be tricky to manage pace of the game—so through user testing, modify levels to be both interesting and winnable.

→ Fast-paced games come at a cost of willingness to read—so position text at completion steps, rest stops, even add artificial load times when needed.

→ Evolutionary tradeoffs are a challenge to communicate—so create slider settings that allow players to feel the consequences of extreme adaptations.
Learning Objectives

- Animals make amazing sounds
- Natural sounds can be musical
- Each animal belongs to an ecosystem
- Biodiversity is important
Game Design

➔ Create an engaging free-play music mixing mode
➔ Create a motivating puzzle around ecosystem theme
➔ Tie the characters to hip-hop culture and to the real animals
➔ Make the game accessible for visually impaired
Lessons Learned

→ In puzzle-based games, tie challenge as tightly as you can to learning objectives—it’s easy to make puzzles for puzzle’s sake, but then you miss out on the educational mission.

→ Joining science content with cultural references can be a useful hook, and an audience broadening strategy—in this case hip-hop references were appreciated by the adult audience, even though they assumed it was designed for younger audiences.

→ To motivate players to solve the puzzle, offer a variety of design clues that help focus the player on the educational mission.
How can we engage younger audiences in birds and biodiversity?
Lessons Learned

1. Games are here to stay. It’s worth figuring out how teach in creative ways using games.


3. Focus on the fun. Educational games can and should be fun. User testing and tracking weekend traffic will reveal the fun factor quickly.