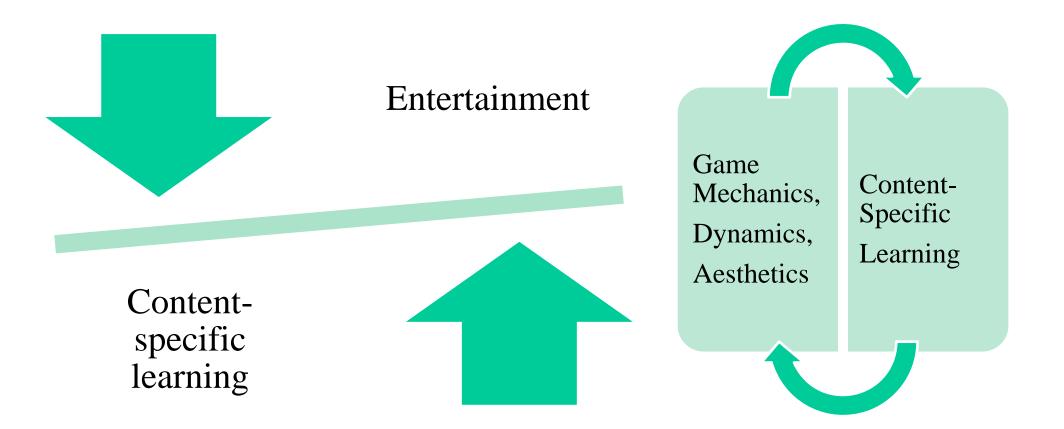
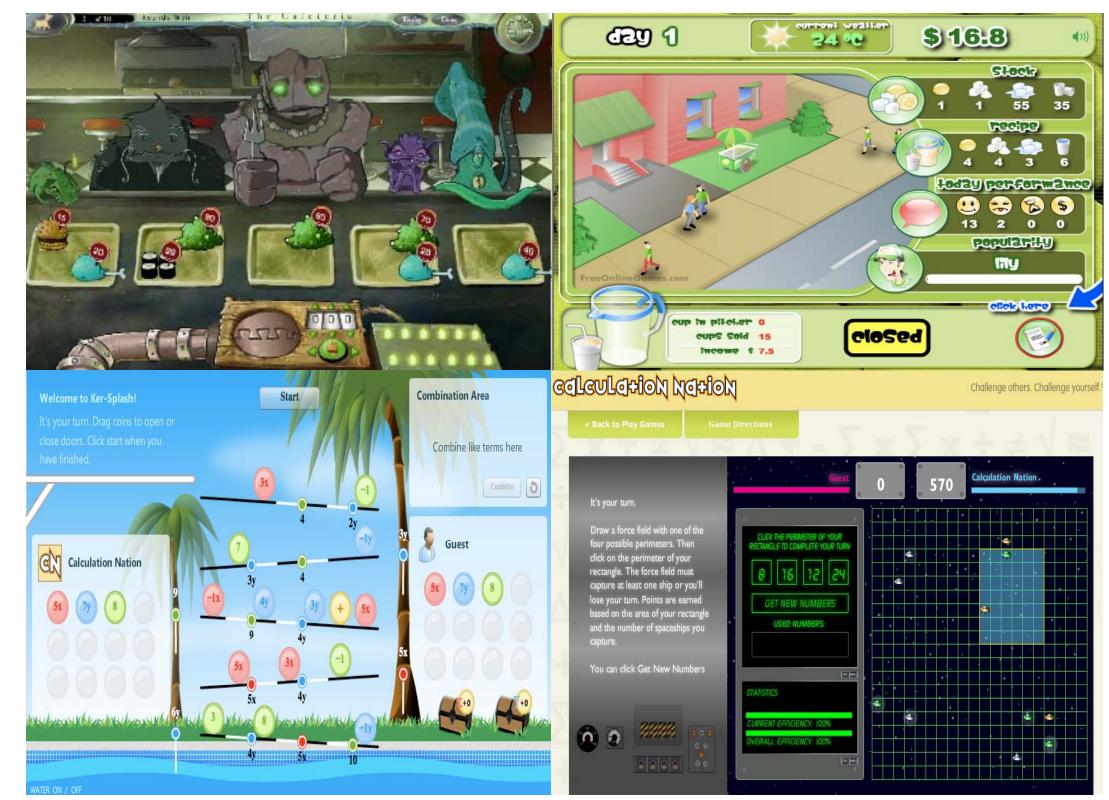
Examining Interdisciplinary, User-Centered Educational Game Design

• **Research question**: What are the cumulative findings on the educational game design and development?



• **Method**: (1) a systematic review of the multidisciplinary literature



on game design and game-based learning, (2) an artifact analysis of representative educational game projects conducted by credible organizations, and (3) interviewing of game designers and developers.

- Findings: (1) A grounded model for designing content-specific, educational games (see the figure on the right side), (2) Distinctive design features that support game-based learning:
 - An integration of simplicity and diversity
 - Balance between content specific and content-generic
 play
 - Cognitive challenges in adaptive level and pace

Gaming Needs Analysis	 Function analysis – learning relevance Player-learner analysis – player relevance
Game Story Development	Content-based story development
Gameplay Mechanics Design	 Gameplay actions: mapping play and learning tasks (React, interpret, or solve/generalize) Gameplay rules: balancing content-specific and content-generic play
Gameplay Support Design	Stealth feedbackPre-training
Game World 🧹	• Intuitive



 Game play, mediated by the features of the games used, can promote content-specific knowledge and skills development.

Future project 1:

Design-based research on virtual-reality-based social gaming for autistic children

Future project 2:

The design and examination of an architecture game for mathematics teaching and learning

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