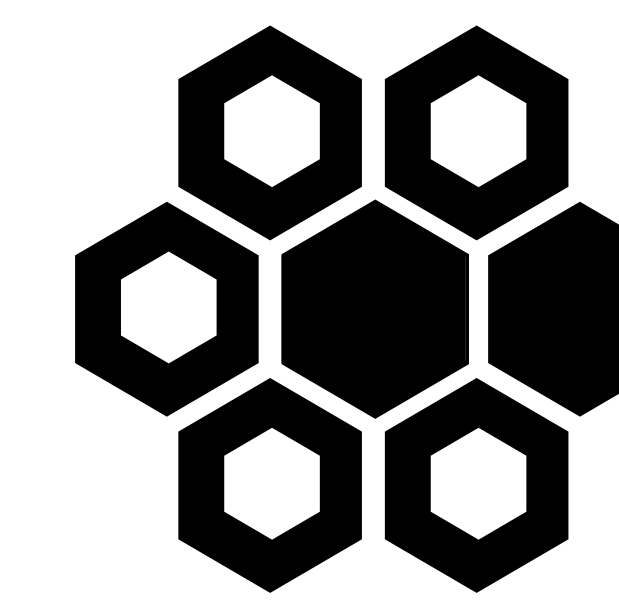


Questioning the Board

in Computer Science Education Board Games

An increasingly popular form of interest-based CSed product is board games. Board games are often justified as interventions due to their 'unplugged' nature and their supposedly natural appeal to diverse audiences. Through an exploration of the popular and academic discourses around the CSed board game genre, we found over 30 games which specifically aim to teach core CS content, including a wide variety of rationales for utilizing a board game format.



Complex Play Lab

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Methods

Sources:

- boardgamegeek.com, amazon.com, google.com

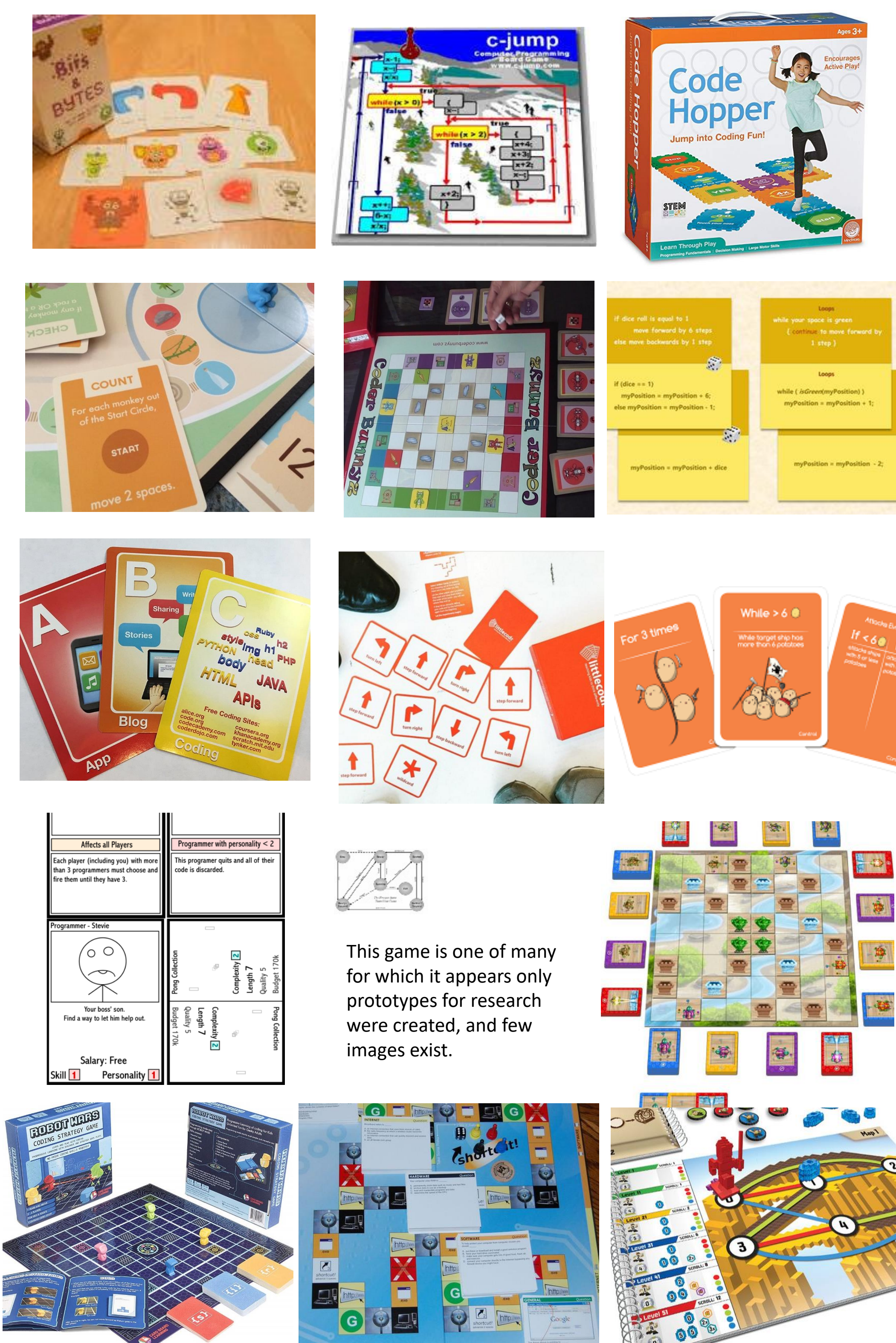
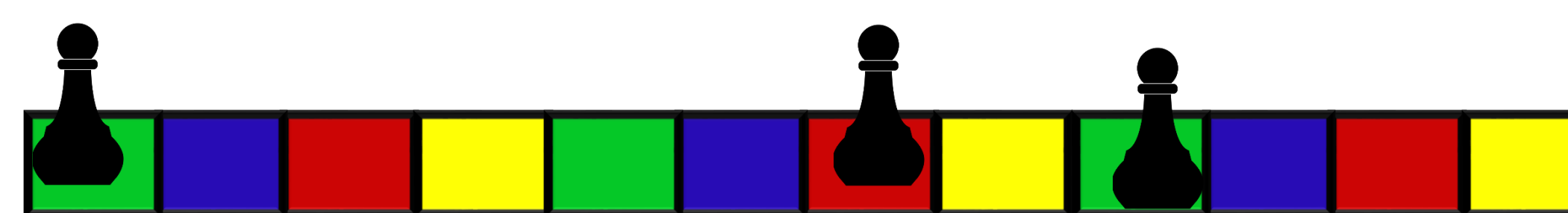
Snowball sampling

Game selection criteria:

- Targeted specifically to CSed learning goals
- Designed directly for the computational side of CSed (as opposed to social or historical elements)
- Related directly to stated CSed learning goals
- Excluded games focused on computer security or circuits

Categories:

- Drawn from game descriptions, instruction manuals, designers' websites, crowdfunding pages, and online reviews
- Coded using the game designers' explicitly stated justifications (excluding reviews)
- Many provided justifications were lightly supported—understandable given the source material was rarely aimed at academic research



Marketing Discourse

- "Some also increased kids' **screen time which can adversely affect eye development**. If your kid got hooked, more practice may also lead them to myopia." – Code Hopper
- "The game would also satisfy parents by driving children **far from screens which would do harm to their eyes**." – Coder Bunnyz
- "All of the games are screen free for a unique, unplugged play experience." – //CODE series
- "Make programming fun by learning the basics without a computer!" – CodeMaster
- "Every parent's dream nowadays is to decrease kids' digital times or have their children spend less time in front of an iPad, **less time in front of a computer**" – CoderBunnyz, interview with designer

These messages may be counterproductive for CS education and should be more carefully considered.

Results



	Collaboration/Competition	Economic Accessibility	Embodied Cognition	Emotional Accessibility	Intersecting Interests	Non-literate Audience	Play With Family	Rules Negotiation	Unplugged
Bits and Bytes									
C-jump									
CodeHopper									
Code Monkey Island									
Coder Bunnyz									
codingFarmer									
Giggle Chips									
Littlecodr									
Potato Pirates									
Problems and Programmers									
Process State Transition									
Robot Turtles									
Robot Wars									
Shortcut									
//CODE Series									

Highlighted columns contained deep inconsistencies and require further analysis

Future Work

Building a guide of Features for Game Designers

- Provide a 'teacher guide'
- Interactivity is key
- Cooperation is better than competition
- Board games have the advantage of transparency in how the system is implemented

