



Universiteit
Leiden
The Netherlands

Exploration through video games

Gómez Maureira, M.A.

Citation

Gómez Maureira, M. A. (2023, April 26). *Exploration through video games*. Retrieved from <https://hdl.handle.net/1887/3594721>

Version: Publisher's Version

License: [Licence agreement concerning inclusion of doctoral thesis in the Institutional Repository of the University of Leiden](#)

Downloaded from: <https://hdl.handle.net/1887/3594721>

Note: To cite this publication please use the final published version (if applicable).

Contents

1	Introduction	1
1.1	Key Concepts and Research Objectives	4
1.2	Research Approach	5
1.3	Research Questions and Chapter Outline	6
1.4	Underlying Publications	9
2	Perspectives on Games, Curiosity, and Exploration	11
2.1	Defining Games	11
2.2	Applied Games, Serious Games, and Gamification	14
2.3	Curiosity and Exploratory Behavior	18
2.4	Conclusion	21
3	Creating a Game-Based Learning Toolkit for Fostering Curiosity	23
3.1	User-Needs Analysis	25
3.2	Initial Prototype	28
3.3	The <i>CURIO</i> Gamekit	36
3.4	Evaluation Study	46
3.5	Using CURIO in class	52
3.6	Conclusion	53
4	Video Games That Elicit Curiosity	57
4.1	Materials and Methods	59
4.2	Procedure	70
4.3	Results	74
4.4	Discussion	78
4.5	Conclusion	88

5	Design Patterns for Exploration	91
5.1	Design Patterns: A Conceptual Tool for Analysis and Development	92
5.2	Strategies for Eliciting Curiosity and Motivating Exploration	97
5.3	Formulating Testable Design Patterns for (Spatial) Exploration	107
5.4	Conclusion	116
6	Level Design for Spatial Exploration	119
6.1	About the Game: Shinobi Valley	121
6.2	Game Controls	127
6.3	Camera and Character	129
6.4	Environment and Game Aesthetics	131
6.5	Tutorial and Help Menu	134
6.6	Game Technology	135
6.7	Game Phases in Chronological Order	136
6.8	Pattern Integration	139
6.9	Pilot Study	147
6.10	Discussion	153
6.11	Conclusion	155
7	Empirical Evaluation of Level Design Patterns	157
7.1	Experiment Design	160
7.2	Procedure	173
7.3	Results	175
7.4	Discussion	185
7.5	Limitations	195
7.6	Conclusion	197
8	Academic Exploration Through Games	201
8.1	Defining Academic Games	203
8.2	Demarcating the Academic Context	204
8.3	Purposes for Involving Games in Academic Contexts	206
8.4	Facets of Games in Academic Contexts	216
8.5	Towards a Research Agenda	220
8.6	Conclusion	222

9 Conclusion	223
9.1 Research Questions Revisited	224
9.2 Contributions	229
9.3 Future Work	231
Bibliography	233
Ludography	253
Acronyms	257

