Situating Quests: Design Patterns for Quest and Level Design in Role-Playing Games

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Abstract. The design of role-playing games (RPGs) is very complex, involving an intricate interweaving of narrative, quest design, and level design. As an important means for conveying the game's story, quests dictate the setting and contents of levels. Levels provide challenges for the player to overcome in the service of completing quests, and their structure can invite the inclusion of certain kinds of quests. This paper presents an analysis of design patterns present in existing RPGs that aims to better understand such relationships. These patterns identify common design practices for quests and levels at many different levels of granularity.

Keywords: quest design, level design, design patterns, game analysis

1   Introduction

Quests are the primary mechanism for narrative progression in most role-playing games, providing the player with objectives that guide gameplay and choices that can influence the story; we call such games "quest-based games". However, level design plays an equally important role as quest design; well-designed spaces situate quests in an immersive world and provide challenges for the player to overcome while fulfilling their goals. Aarseth defines quests as being intricately tied to a player's movement through space [1], while Howard describes level and world design as the "first step" for creating quests [2]. He states that the goal of level design in quest-based games is to provide the player with direction towards the quest goal, while also challenging the player with "disorientation". Though the first step in designing a quest may be to build the level it inhabits, the design of a level can also inform quest design; quests are constrained by the existing, physical structure of the world. Due to this tight integration of level and quest design, we argue that any analysis of one of these aspects of the game is incomplete without an analysis of the other.

We have performed such an analysis through the creation of a library of design patterns for role-playing games. Our work has been heavily inspired by Christopher Alexander's identification of an architectural "pattern language" for cities and buildings [3], especially how his patterns span many different layers of abstraction. Like other design pattern libraries for games [4-8], our patterns are largely descriptive in nature. We have aimed to be more formal than existing game pattern libraries; each

pattern has variables describing how its use can differ across implementations. We also strive to exhaustively define relationships between patterns, and understand how patterns across different layers of the hierarchy work together.

We present our library of design patterns and examples of how this library can be used to describe a complete quest and level pairing. The pattern library provides an improved theoretical understanding of how levels and quests are related to each other, and allows for a common vocabulary for discussing the design of quest-based games.

2   Design Patterns

Each pattern is identified as a quest or level design pattern, and placed into a category in the hierarchy we have defined. This section describes these categories and provides an example pattern. For space reasons, not all of the identified patterns can be described in this paper; a full listing is available online.[1] At time of writing, there are 33 quest design patterns and 57 level design patterns drawing from an analysis of over 20 RPGs. References to patterns and pattern categories are denoted in italics.

There are five different categories for quest design patterns that range from patterns of player behavior to common methods for storytelling through quests: *Quest Action, Quest Objective, Quest Structure, Quest Superstructure, and Purpose.* The first four form a containment hierarchy: the overall quest superstructure for a game contains a set of quest structures, each of which are made up of quest objectives, which the player fulfills by taking quest actions. Patterns in the *Purpose* category describe the gameplay reason for a quest being given.

There are six categories for level design patterns, covering both configurations of level geometry and patterns of NPC behavior. *Physical Element, Physical Area, Level Structure, and Level Superstructure* patterns form a containment hierarchy similar to that of the quest design patterns. There are also *NPC* and *NPC Encounter* patterns that describe common kinds of NPCs and how the player might interact with them.

2.1   Example Design Pattern: Arrowhead Questing

Arrowhead Questing refers to a chain of quests that begin with broad *objectives* that narrow down to specific *objectives* of great significance. A common instantiation of this pattern has the player *kill* progressively smaller numbers of stronger units, from simple *standard encounters* all the way to a *boss battle* at the end of the chain.

The style of arrowhead questing is a common pattern for teaching the player how to perform increasingly difficult tasks, and may make the player's actions in the world feel more significant as each step in the quest chain typically affects the next quest. In terms of story, this pattern gives narrative a framework for progression.

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[1] The RPG pattern library is available at http://rpgpatterns.soe.ucsc.edu. A complete description of every pattern mentioned in this paper is available on the website.

Variables and Affordances. Arrowhead Questing is a *quest structure* pattern that contains multiple, smaller *quest objectives*. The pattern has a starting quest and ending quest, and a variable number of middle quests. This pattern also varies in how related each stage in the quest is to the other; some arrowhead quest chains involve simply killing progressively more difficult enemies in an area, while others may incorporate a story by having the player perform a series of different tasks that are all thematically related. An arrowhead quest structure that has little internal variety may be considered a *contextualizing quest*, as the repetitive objectives can teach the player how to perform particular actions or how to use specific strategies.

Examples. The *Fallout 3* [9] quest chain "Blood Ties" fits into this pattern. The player is first asked by someone in Megaton (the starting town) to deliver a letter to their family at a different settlement. Upon arriving the player finds out that the person who was supposed to receive the letter has gone missing, and the people of the town blame raiders for the kidnapping. The player is now tasked with the less general but more significant objective of hunting down said raiders. Upon finding them there is an option to either kill them all, wiping them from the game world, or to converse and convince them to not attack the town anymore. This final task has the greatest impact on the game world of any tasks in the quest chain.

Quest-Level Relationship. On a large scale, arrowhead questing can be a subplot that exists within a *city* or an *uncharted area*. On a smaller scale, it might involve the player progressing through a *gauntlet* of increasingly difficult enemies. The conclusion of an arrowhead quest chain is frequently a *boss battle*.

3   Worked Example

Below, we show how the patterns we have identified (denoted in italics) can be used to describe a quest and its associated level in the "Scan the Keepers" quest from Mass Effect [10]. This is a small-scale *side quest* that the player receives early in the game.

After the player's first visit to the council, one of the *companion* party members points out a Salarian (*interactive NPC*) examining a Keeper (*non-interactive NPC*). If the player initiates *dialog* with the Salarian, he'll discuss his work scanning the keepers of the Citadel (*city*) and mention its questionable legality. He then asks the player for assistance, initiating a quest to search and scan all the keepers, which has both *search* and *collection* as objectives. Since the player is not required to complete this quest, it is considered a *side quest*.

There are 21 keepers scattered throughout the different districts of the Citadel; some are hidden down *hallways*, while others are operating in plain sight in different *nuclei* of the *city*. The player is given a scanner (a *quest-tied item*), and.each time the player finds and scans a keeper, she receives credits and experience. There are bonus credits (*money*) and experience if all of them are scanned. The player can instead make a *choice* to encourage the Salarian to discontinue his research.

This quest rewards the player for fully exploring the citadel, through the search for Keepers. The Citadel is a very large space that is the starting area for the game, and

the player must complete a number of main-plot quests in the area before reaching a *bridge* to a new section of the game. It could also be considered a *contextualizing quest*, as it indirectly introduces the player to the city's rapid transit system, which *warps* the player to different districts. By encouraging the player to fully explore the station, the quest introduces the player to areas where more *side quests* can be found.

4   Conclusion

This paper has presented a collection of quest and level design patterns for role-playing games. These patterns were found through an analysis of over 20 different quest-based games, and span many different layers of abstraction, from small items found in a level to broad, game-wide quest structure. The patterns we have identified help us better understand the relationships between level and quest design, and how exactly levels situate quests in a space that the player can explore and conquer. The formal pattern definitions and their relationships are currently being used in the creation of a procedural quest and level generator that can assist human designers. We anticipate expanding our pattern library over time to include many more patterns and detailed examples, as we uncover further patterns during the development of this tool.

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