An MDA Analysis of *Enter the Gungeon*

Plagiarism Declaration and Assignment Cover Sheet

ESSAY COVER SHEET

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An MDA Analysis of *Enter the Gungeon*

Enter the Gungeon (Dodge Roll, 2016) is a rogue-lite shooter and bullet hell developed by Dodge Roll and published by Devolver Digital. A rogue-lite is defined as a game that has adopted some design elements of the popular rogue-like genre as described by the Berlin Interpretation while choosing to not implement others, a 'bullet hell' or 'danmaku' is a genre popularized in Japan that focuses on reflex and ingame situational awareness of enemies' position, type and where they are in relation. 'Bullet Hells' also promote a competitive environment wherein players will compete unofficially for the lead position (Johnson, 2016). This mix of genres is a popular format within the indie game community with titles such as *The Binding of Isaac* (McMillen, 2011), *Nuclear Throne* (Valmbeer, 2018), *Moonlighter* (Digital Sun, 2019) and *Curse of the Dead Gods* (Passtech, 2020) are a few examples of rogue-lite games that are either classified as 'bullet hells' or borrow aspects from the genre. This essay aims to analyse *Enter the Gungeon* using the MDA Framework as prescribed in MDA: A formal approach to game design and game research' (Hunicke et al, 2004).

A common mechanic in rogue-like or lite games is the resetting of the playable character(s) on death. This can either be a complete reset of the entire game or the player will be able to start a new playthrough while carrying over some items and currency from the previous run. In many titles from these genres the player is often able to unlock item outside of the core game loop with ingame currency or unlock items as they play the game. This positive feedback loop rewards players for progressing further each time they play, creating a new feedback loop. This second loop starts off as a positive directly proportional reward system; the player receives stronger items as well as a wider variety of said items as their skill increases. At a certain point, the loop will begin to transition to a negative or indirectly proportional feedback loop; as the player's skill increases the number of new available items will decrease until it reaches zero, in the majority of cases.

This is the case for *Enter the Gungeon*, as the player begins to adapt and their twitch and pattern recognition skill improves the amount of 'Hegemony Credits', an ingame currency that is used to unlock items before starting a new run. These credits are earned for defeating bosses and the number of credits gained will increase as the bosses get harder. The player is also rewarded with more credits for not taking damage during the boss fight. This positive feedback loop rewards those who put time into the game and work on improving, a sensation of achievement and pleasure every time they progress further than their previous attempt. This positive loop is contrasted against the negative loop of increasingly difficult gameplay, as the player progresses through each level they may become stronger statistically but so do the enemies. This loop creates the aesthetic of challenge, which is widely associated with games of this type. The competitive nature of the genre's many communities provides challenge from a different input, tension and time pressure This results in unofficial competitions between players.

The majority of popular speedrunning games all have a premade set of levels, with set positions for items and enemies. These positions and levels are then studied by those wishing to compete. The additional challenge that many rogue-lite 'bullet hells' offer is that many are work around a procedural level and item system. *Enter the Gungeon* is one of these games, it procedurally generates the levels based on a set of rules:

- A random number of rooms in total.
- One boss room

- Two standard chest rooms with a random chest, one will always contain an item and one will contain a gun, unless the item has been removed by an NPC.
- The probability for additional chest rooms with a random item or gun inside.
- The probability that one of those rooms will be a shop with either one or two vendors.
- The chance that one of these rooms will be a special room i.e. An event, a miniboss or an empty room.
- The room's exits will be blocked if there are any enemies in the room when the player enters and will only unlock when all enemies have been defeated.
- The chance that an item room with two possible entrances will have one of the entrances blocked.
- The minimap will update with this information as a player discovers it.
- The chance that a teleporter will be available in a room.

These rules govern the generation of the rooms as well the navigation choices a player makes. These choices can include choosing a certain route because they believe that it will take them to the unblocked entrance to an item room or an experienced player may be able to predict the location of a boss room and then which boss they will encounter depending on the layout of the level and the orientation of the boss room entrance. The game is mostly governed by procedural rules or probability but there are variables that are attached to the player's avatar that will dictate what may happen upon entering or clearing a room. These two variables are curse and coolness, each character starts off with a set amount of coolness and 0 curse. These two stats do not affect each other in any way unless the player has obtained one of a few specific items. Coolness affects things such as reload speed; the chance of a player being rewarded upon clearing a room and shop prices. Curse scales the difficulty of enemies, changing their attack patterns and health values to make them more challenging.

Recognizing patterns in a core skill required to be successful at 'bullet hell' games. *Enter the Gungeon* bases all boss fights and some enemy attacks on this skill. The movement mechanics for *Enter the Gungeon* work around this skill by allowing the player to move in only 8 axes; the enemies also can only move in these axes. This makes dodging a wave of projectiles much easier as the player has as set range of motion; this removes system mistake and input misinterpretation. Thus, if a player takes damage it is either their mistake or lack of skill which caused it and not the system. This movement system is also reminiscent of classic games that used a similar camera perspective and promotes the competitive culture in the community as it places emphasis on skill. The other mechanics that may be used to avoid taking damage is a dodge or roll that gives the player invincibility frames for the first half of the animation, this mechanic borrows from cheesy action movie stereotypes and is commonplace in rogue-lite games, the player also receives two blanks every floor with the option and chance to gain more on said floor. This item will clear a room of all current enemy projectiles, this is a mechanic that can be used if the player is in a situation that they cannot escape from normally as well as it can be used to break fake walls and reveal a hidden room. The final base avoidance mechanic is the player can flip over tables and certain environmental props to hide behind, some enemies are also able to do this. This mechanic leads to some immersion and makes use of another action movie stereotype.

The second set of mechanics that are just as important in a 'bullet hell' as movement is the gunplay or shooting mechanics. The enemies shoot projectiles at the player, at random

intervals and directions or in a pattern, the rate of fire and type of projectile will differ between enemies, but the mechanic remains the same. This also applies to the weapons that are available to the player, almost all of the weapons are gun themed and shoot a projectile. These projectiles are either projectiles or beams, the behaviour of the projectile, rate of fire, damage and effect, is dependent on the weapon used. This links back to the feedback loop of discovery and experimentation as well as the sensation of discovering a new effect or powerful weapon. This can only be achieved through the procedural nature of the game; the more items a player unlocks the more options they will have available to utilise during a run.

Mechanically and statistically the weapons vary in function; some beams weapons will lock onto a target thus allowing the player to focus on where their character is situated within the room, the total ammunition of a gun informs the player's decision on whether to use it as a room clearer or against a boss, the rate of fire and damage of a gun may not be what was expected and many more variants. The variety of weapons makes allowances for both the skilful and unskilled player bases but at the very base mechanics all weapons operate on the same principle: aim, click and shoot.

Weapons are not the only available item in *Enter in Gungeon*, there are passive and active items as well as health and currency pickups. The active items are items that require the player to press an input to use. Some have a limited number of uses while others may only go onto cooldown, a passive item is one that will increase or decrease various statistics of the avatar or grant them additional abilities. This includes speed, health, resistance to certain damage types, the ability to fly, faster reloading or hinting at the location of a secret or hidden room. The interaction between all items and how they affect each other is another aspect of discovery that the game contains, when certain items are held at the same time in the player's inventory the game will inform the player through a popup text box that they have a synergy. The effect of these synergies is hinted at by the name as is the case for every other item.

The choice to use vague descriptors and communicate the rarity of an item through an item chest's colour or, price of an item or the effect it has on enemies allows the player the freedom to decide for themselves as to what play style and strategy they will utilize. This freedom of expression and lack of punishment works to prevent the stagnation of progression for newer players and rewards the skilled player. This feedback loop results in the game being utilized as both a competitive arena and a pastime.

In conclusion *Enter the Gungeon* is a challenging game with stable positive and negative feedback loops that allow for progression within the playerbase, exploration of the player's identity and impact within the game and mechanics that are both punishing but promote twitch and pattern recognition skill development and improvement.

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