

# Learning in DOOM Eternal

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## Abstract

This essay analyzes the methods in which DOOM Eternal instructs its player base to succeed against complex challenges in ways that match three of Gee's learning principles: 'Customization,' 'Cycles of Expertise,' and Information 'On Demand' and 'Just in Time. These principles are built into the game in a way that forces the player to learn and practice many skills without feeling it like a task, allowing for the player to make the experience their own. As this process repeats the player slowly becomes a more skillful learner, and eventually can take on the final boss, The Icon of Sin.

The original DOOM was released for Microsoft Disk Operating System (MS-DOS) in 1993 by iD Software to great controversy. It was considered to be the most realistic game to date and entirely too violent by some. As time and technology progressed, the DOOM series continued to grow, including many subsequent games and a few films. The series took a decent break in 2004 after the release of DOOM 3, with only a few remasters and two expansions for previous games. Then, in 2009, the incredibly well-known Bethesda Softworks purchased iD Software while acquiring its parent company, ZeniMax Media. This allowed for the series to get a soft reboot with the release of the 2016 game titled “DOOM” often referred to as “DOOM 2016,” which was well received with 95 percent positive reviews on Steam, a 7.1 out of 10 by IGN, and an 88 percent on PC Gamer. The game sold over three million copies in its initial release month, and this financial success created the opportunity for a sequel. In 2020, DOOM Eternal was released as a direct sequel to DOOM 2016 to an even greater fanfare and financial success. With IGN giving it a 9/10 and PC Gamer giving it 94 percent, it received many “Game of the Year” awards and had a massive player base. Despite having many fans and critical acclaim the game is exceptionally challenging, which begs the question, “How does such a harsh experience gain such a wide audience?” The answer may be detailed in the writing of James Paul Gee, on learning principles in games.

Gee’s learning principles are concepts on how video games can relate to learning in both the games themselves and real-world examples, such as the classroom. Gee declares that many aspects of different video games can be used as learning templates: the ability to “Customize”, elaborate “Cycles of Expertise,” and the style of receiving “Information” are three of the topics listed in *Learning by Design: Good Video Games as Learning Machines*.

Customization refers to the ability to change something about the game to make it work better for a specific player. This can include the ability to raise and lower the difficulty level to make the player experience the most enjoyment. This is also achieved with the inclusion of upgrade systems that let the player make choices on how they want to stylize their actions. Also, the allowance of varying strategies encourages the potential to lead to success. (Gee, 2005, p. 7)

Cycles of Expertise are created by making a player become proficient at a task and then changing or adding an element that makes the player either re-learn an aspect of the game or discover something new. The typical gamer tends to see this with bosses at the end of levels, and special in-game challenges that tend to be slightly more difficult than the rest of the game. This creates a new and entertaining challenge for players that helps create good pacing and keeps the player entertained. (Gee, 2005, p.10-11)

In terms of how information is given to the player, many of Gee's principles can be grouped into one. Information can be given as soon as the player is given it, or it can be given at the beginning and pulled up by the user at will. This is referred to as "Just in Time", and "On Demand" by Gee. Two forms of this include "Fish Tanks", and "Sandboxes", which are both simplified versions of in-game aspects without as much, or sometimes any, consequence to trying and failing new things. The differentiation is that Fish Tanks tend to be tutorials that are scaled-down versions of the game, and in Sandboxes, you get more complicated aspects with a focus on a lack of consequences. (Gee, 2005. p.11-13)

Ever since the release of the original DOOM, it has been a series synonymous with violence and death. Even though studies suggest that "restricting children's access to violent video games would not decrease the occurrence of violence"(Suziedelyte, 2021, p.123) it would

be wrong to talk about DOOM without mentioning some of the events blamed on the games. Eric Harris and Dylan Klebold, the two shooters of Columbine High School on April 20th, 1999 were active players of both DOOM and DOOM 2 as well as many similar early FPS games. (Simpson and Blevins, 1999) Other gamers that interacted with them online even claim that they made a recreation of the school in DOOM 2 using the map editor. However, the maps proven to be made by the two were unskillfully crafted and the specific ability of the DOOM map makers available at the time was not complex enough to make something of that scale, so this is considered to be an urban legend. Brooks Brown, the former friend of the two shooters, has even created a virtual reality game with the intent to help form empathy for tragedies such as school shootings showing that games can do good as well. (Farrell, 2018) This prosocial game is one of many examples of games that can be used to help people understand a nearly incomprehensible experience since there is much evidence that prosocial video games affect the behavior and actions of people, especially children. (Gentile, 2000) With DOOM Eternal having no violence from the player toward humans, and the entire purpose being to save as many people as possible there is no reason to believe DOOM Eternal could cause any real-life problems.

Doom Eternal is a high-action first-person shooter (FPS) where the fluidity of movement, knowledge of your skills, and resource management are all incredibly important. Like many FPS games, you have to manage health, shields (which are essentially bonus health), and ammunition. Doom Eternal is special however in the ways you receive these resources, as this game requires brutal violence to acquire larger amounts of these. You gain health from the “Glory Kill” system of weakening an enemy to low health and then finishing them with a brutal move, shields are

received while setting your enemies on fire with your shoulder-mounted flamethrower, and ammo is dropped when you cut apart an enemy with the chainsaw.

The skill barrier is mostly determined by the players' ability to actively and fluidly use the movement system to their advantage. There are many ways the player can move that aren't as common in FPS games. This includes a recharging dash to quickly move forwards, backward, or to the side to reach further objects or avoid taking damage. The jump system allows for the player to jump a second time in the air, some players that choose certain upgrades gain more control while in the air and even the ability to slow down time so that aiming can be more precise after jumping. Skills and upgrades are more closely examined later. Areas can be climbed to reach higher places, and poles can be used to swing from in order to gain momentum in the chosen direction. Finally, and most uniquely, there is a grappling hook that can be shot exclusively into enemies, which pulls your character to them while dealing damage and skilled players can move the mouse in a way that makes this act almost as a slingshot in any direction.

The amount of things the player can customize in DOOM Eternal is so immense, that if it wasn't slowly deconstructed and handed to the player one piece at a time, it could be quite confusing. There are many small-scale adaptations that don't affect anything other than visuals—such as skins and paint jobs for the weapons, monsters, and Doom Slayer, and these can be chosen purely to match the players' aesthetic preferences. These details add very little to the game but can be fun or even a little bit silly at times, such as making an enemy wear a hotdog costume. More important to the game itself is the customization of multiple skill point-spending systems that allow for the player to choose many aspects of both character and weapons to match their desired playstyle. Customization in games— and anything that needs to be learned in

depth—is exceptionally important as it allows people with different backgrounds and previous experiences to change the systems to match what works best for them. This allows for more enjoyment and a better learning experience. (Gee, 2005,p.7) There are three main aspects to upgrade in-game, your abilities, your suit, and your weapons.

First is the predator armor upgrade system. (shown in Fig.01) This is an upgrade system that allows you to add new strengths to your armored suit to allow for new systems in the form of movement, hazard avoidance, exploration, damage with certain weapons, and decreasing equipment cooldown. These options can help players that are struggling to do enough damage, find secrets in the environment around them, and so much more. This is very similar to many skill trees in video games; however, the sorting system and point values are quite interesting and unique. A player receives these upgrades by finding Predator Tokens in the game, sometimes hidden and sometimes easily accessible, and then choosing the upgrades in the menu.

Second is the Sentinel Crystals (also slightly pictured in Fig. 01) which are smaller upgrades to specifically increase either the amount of health, armor or ammo you can hold at one time. Every time a player chooses an upgrade, however, they also get a bonus upgrade such as an ammo magnet that will pull ammo off the ground to them if close enough. These upgrades are found in Sentinel Crystal hubs around the map, typically adequately hidden and most likely will be missed by a majority of players. These upgrades are incredibly helpful and can help modify the game to the players' tastes incredibly well.

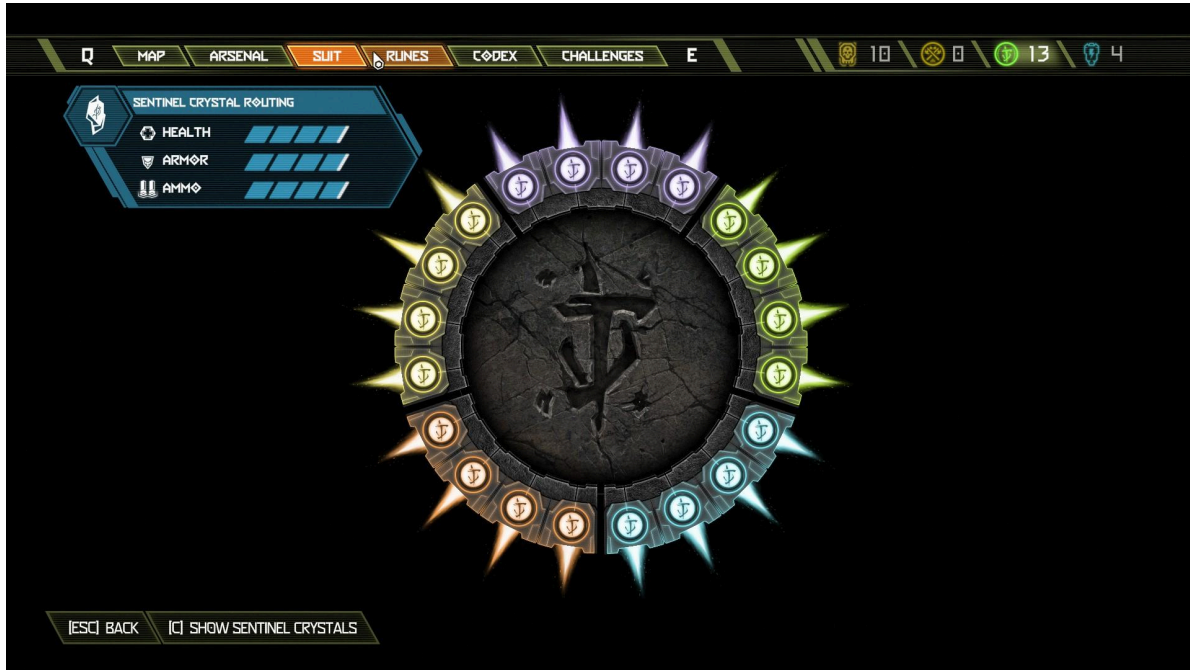


Fig. 01 shows the Predator Suit upgrade wheel with the number of Predator Tokens per upgrade, as well as the currently selected Sentinel Crystal upgrades in less detail on the top right.

There are also individual upgrades for each weapon, such as the ability for the standard shotgun to shoot sticky grenades that deal massive damage. However, there are also additional perks that can be added to these weapons upgrades such as getting the shotgun sticky grenade and adding the extra explosion radius or rapid fire option. These allow players to experiment with different tools and see what they enjoy most before adding extra points towards more upgrades. Weapon points are the most entertaining to receive, as you get them by completing standard and bonus fights while you play through the game normally.

Finally, the Rune system (shown in Fig.02) is another upgrade system that uses its own currency and allows for specific upgrades such as: more control while in the air, slowing down time while airborne, or performing Glory Kills faster or further away. The player can easily collect all of these through careful exploration, but the catch is that only three can be equipped at



the same time, making it more important than any of the other upgrade systems in the game for early decision-making.



Fig. 02 shows the possible rune icons with the three out of nine selected for current use on top.

Patrick Jagoda declares that “Difficulty expands our understanding of video games as objects”(Jagoda, 2018, p. 230) and, to a large degree, those difficulties determine the enjoyability and competitive nature of the game. The other thing that the game lets you customize is the difficulty of the game. This allows for the game to be accessible to any player with any skill level. This is done at the beginning of the game when choosing a difficulty level. There are five main difficulties ranked from easiest to hardest: “I’m Too Young to Die,” “Hurt Me Plenty,” “Ultra Violence,” “Nightmare,” and “Ultra Nightmare,” which is a special one-life version of Nightmare. Beyond these basic difficulty levels, there are many ways to change how easy or hard the gameplay is. If the game is too hard in only a certain aspect—such as too little ammo—cheat codes are easily accessible in the menus. If the player is only struggling with a current boss, they

can spawn in “Sentinel Armor” mode which decreases the amount of damage you take without altering progress or the number of enemies. If the game is too easy at a point, there are other ways to make the game more difficult for the player. Challenges, such as killing certain enemies in certain and difficult ways, and extra optional fights exist and are easily available.

The amount of information that the player is required to know in order to be successful in beating DOOM Eternal could easily seem daunting if not received in small, easily understandable doses throughout the game. First is the information that is given, as Gee would describe, “Just in Time.”(Gee, 2005, p. 11-12) When the game begins, small pop-up text boxes provide the basic moves in a way very typical of action games of this variety. Interestingly enough, it doesn’t give any information on how to walk, look, or shoot your starting weapon. This is most likely because the developers knew that the people who typically will play DOOM Eternal have the basic understanding of first-person controls already nearly built to muscle memory.



Fig. 03 An example of a common pop-up tutorial system used when new mechanics are introduced

This style of the pop-up tutorial (shown in Fig. 03) is how most information is given to the player. However, if there is a new concept that requires more information or is more easily illustrated than told, the player is teleported to a room that resembles a testing facility (shown in Fig. 04) with the classic yellow hazard lines and gray metal aesthetic. This is what Gee describes as a “Fish Tank” system, as there are no consequences and it is a considerably simpler version of the gameplay. (Gee, 2005, p.12) Then, the player is shown how and allowed to practice a certain action that will be required many times throughout the game to succeed. Whenever the game determines that s the player thoroughly understands, the Doom Slayer is teleported back to the main game and it continues as normal.



Fig. 04 An example of the Fish Tank tutorial rooms that allow for players to practice new mechanics

The rest of the information is given as Gee describes “On Demand” and it is accessible to the player at all times (Gee, 2005, p. 11-12). Like most games, the user can check all of the

controls by going into the menu and checking the settings, and, like many games, there is information given as a reminder in the loading screens upon death and travel. But where DOOM Eternal goes the extra mile is the “Demon Prison.” This is what Gee would describe as a “Sandbox” system because it is as in-depth and detailed as the full game; however, there are no consequences for trial and error or even full-on failure. The demon prison can contain any of the enemies you have seen so far in the game in a multi-leveled arena with many of the environmental hazards that the rest of the game contains. If the player dies, they are just taken to the exit and allowed to try again with anything used returned to the inventory. This allows for the player to re-learn many of the mechanics, in case they had taken a break from the game and forgot certain things, or if they just want to experiment and try new ways to chain attacks without worrying about wasting ammo or lives.

As previously defined, the Cycles of Expertise allow for the player to learn, test, pass or fail, and then move on to something new and repeat the process. (Gee, 2005, p. 10-11) This is best shown through the bosses fought throughout the game, specifically the first one. The first real boss, even though it returns later as a mini-boss, is the Doom Hunter (shown in Fig. 05). This creature is created from the limbs of destroyed demons to fight the Doom Slayer and appears as a cyborg tank demon with mounted weapons. The important things to note about this enemy are the over shields, the long-ranged miniguns, the tracking missiles fired from its shoulders, and melee attacks at close range. Without having faced previous enemies designed to show how this boss is supposed to be handled, it would be a nearly impossible process. Especially after you beat the first one and then have to fight two at the same time. Luckily the game prepares the player for every aspect of this fight.

First, the over shield is nearly identical in appearance to the ones that some of the standard demon soldiers wield in earlier levels, and a pop-up instructs the player that they are only easily damaged with the plasma rifle. The standard gun-arm weapons that the Doom Hunter uses to fight you are very similar to many standard attacks throughout the game, and very early on the player is told that to avoid being hit by these weapons they must continue moving at all times. The tracking missiles would hit the player every time they were fired if the game hadn't already introduced an enemy with the same mechanic. The revenant, introduced early on, had very similar shoulder-mounted rocket launchers that track the players until a dodge or double jump is performed. Finally, the mele is shown being tested in a lab early on in the level, dealing massive damage to whatever it hits.

Because of all of this information, and the roughly five hours of gameplay leading up to this point, the player is fully prepared for all of these individual aspects that they learned early on. However, they have not faced them all at the same time. This is the type of small change that Gee describes that will test the player to assess whether everything they learned has stuck. After this is done, new elements are introduced and the cycle continues until the very end of the game with the final test.



Fig. 05 The Doom hunter in its first phase with the weapon that can damage its shield best in hand

After ripping and tearing your way through all twelve levels, hundreds of demons, and multiple levels of hell, the player arrives at their final challenge. They must defeat the Icon of Sin, a colossal demon towering above the multiple-storied building. It is clad in heavy armor and has new attacks that aren't anything the player has ever seen before. Luckily the game has trained the player how to deal with new circumstances from the very beginning of the first level. When the battle begins, the player is in what appears to be the top three floors of a large building with the boss to their front and standard enemies to every side. The game gives a brief pop-up describing the new mechanic, sectioned armor that must all be destroyed to eventually deal damage. Then the rest should be muscle memory for the player: glory kill enemies whenever low on health, use the chainsaw whenever low on ammo, and use specific weapons where they best fit. Soon all the armor is destroyed and the Icon of Sin flees through a portal. The Doom Slayer also goes through the portal and the fight continues the same way except now the battlefield is less forgiving. After thousands of bullets and countless deaths, the player will finally be successful and save the human race from their DOOM.

The addition of new concepts for the player to learn even at the final boss is something that really separates DOOM eternal from most games. DOOM Eternal can pull this off because it has taught the player how to learn quickly in this specific gaming environment. In, *Learning, Attentional Control, and Action Video Games* it is stated that the “enhanced performance noted as a result of action video game play is, in fact, the result of enhanced ‘learning to learn’” (Green, 2012) which is exactly the concept that makes DOOM Eternal excel at teaching its player base how to achieve success.



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