

Taming the Black Dog

A Major Qualifying Project Report
Submitted to the faculty of
Worcester Polytechnic Institute
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Degree of Bachelor of Science
in
Interactive Media and Game Development
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Abstract:

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Taming the Black Dog is an Interactive Media and Game Design Major Qualifying Project completed at the Worcester Polytechnic Institute. It is an RPG where the protagonist is a student at a University taking a course in Psychology, specifically to learn how to identify and treat the symptoms of depression. However, their newly learned skills are put to the ultimate test as they are periodically transported to a parallel world that resembles our own, but the symptoms of depression manifest physically as fearsome monsters that threaten to overwhelm the protagonist and those close to them, all the while hounded by the eponymous Black Dog and its permutations, each more fearsome than the last. The experience goal of *Taming the Black Dog* is that, though they might not take the form of vicious monsters in a phantasmagorical plane, players will be able to recognize and address the same symptoms in the real world.

Acknowledgements

We would like to thank our advisors, Professor Chery and Professor Sheldon for critiquing our work, be it art assets, story elements, or other design choices for *Taming the Black Dog*. We would also like to thank the various play-testers whose experiences and opinions helped us refine the game during D-Term.

Introduction

We first met Aaron Segel in August 2017 when he pitched his game *Taming the Black Dog* to us. His vision was of making a game that was not only entertaining and challenging, but could also teach players skills that could be applied to the real world as well. He proposed a game about a freshman college student who planned on majoring in Psychology. The first chapter would be about their (gender customizable) first day in the class. The introductory class would be familiar to anyone who had attended college, meeting the teacher, an overview of the course curriculum and the names of fellow students.

After the third chapter concludes, the player character finds themselves in a phantasmagorical plane of reality populated by monsters that symbolize the symptoms of depression. Thankfully, as terrifying as these monsters appear, they have the same cures as their real-life counterparts, permitting a diligent and attentive student the ability to win the day.

However, the player character must contend with the Black Dog and several of its forms in order to truly master the lessons they need to survive both the nightmare realm, and their academic career.

The first order of business was to research Art Assets from popular Japanese RPGs such as “Final Fantasy” and “Chrono Trigger.”



Figure 1: “Chrono Trigger”, 1995

Though, as the names imply, both are set in Fantasy Worlds or the Medieval Era, both games’ art design were highly influential on the more mundane and realistic setting of *Taming the Black Dog*.



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Figure 2: Plant and Grass Sprites

Originally there were supposed to be outdoor locations to serve as transition areas between the various locations in the story. We were also going to animate these patches of grass and trees shaking due to the wind as a harbinger of the Black Dog. These outdoor screens were ultimately abandoned, but we made several trees and grass textures before it was cancelled.

World-Building

Due to the backbone of *Taming the Black Dog* being the RPG Maker Game engine, many real-world buildings and areas on the WPI Campus were used as inspiration for the locales of the game, which also serve as analogues to the shops and transportations hubs of the RPG Genre.

The four major locales used in our game are the Classrooms, SDCC, Campus Center, Common Room, and Dorm Room although many other locales were considered,

but didn't make it into the final game while others were considered redundant for the purposes of our essay.

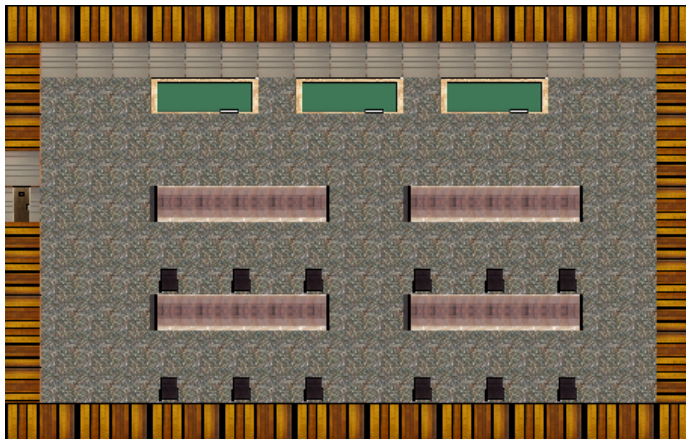


Figure 3: Classroom

The majority of the Story Content and Character interactions are going to take place in the Classroom, where the student will receive lectures that give hints as to how they are expected to survive the daily battles with the Black Dog and allows them to interact with other students who may be afflicted with the symptoms of depression outside of battle and will become party members later. We specifically based the classroom on Stratton Hall 115, an auditorium rather than a standard classroom to grant a sense of scale.



Figure 4: Gym Sprites

In one of the early stages of planning the game, one of the levels we wanted to create was a Gymnasium. The Gymnasium was intended to serve as an area in which one can improve their physical stamina and boost their endorphin levels to combat the lethargy that typically manifests in victims of depression. The Gymnasium was going to include all forms of exercise to demonstrate the comprehensive workout required to maintain both a healthy mind and body. The Sprites we created were a Treadmill and an Elliptical Trainer for Cardio, and a Bench Press and Dumbbells for classic weight training. Ultimately the Gym level was cut from the game but trial and error is an important part of the game design process.



Figure 5: SDCC

The Student Development and Counseling Center is the second locale in the game. Here you and your study buddy Sam meet Nathan, a guidance counselor who gives

you advice on how to confront depression before your first encounter with the Black Dog. This area is based on the SDCC building on WPI's own campus. While not one of the original locations discussed in the early meetings and as a location only used once, the SDCC sets the tone for the rest of the game.



Figure 6: Library

One of the original level ideas that ended up being implemented was that of the Library, because what college campus is complete without a library. Despite the typically cerebral connotations of a library, this level is where the player encounters Jill, the hunger and diet specialist whose attacks and spells are centered around eating healthy. Originally the library was going to be more research oriented, but our tight schedule wouldn't allow us to implement those lessons.



Figure 7: Common Area

As the game continues, the attacks begin to hit closer to home, or at the very least the dormitory, the home away from home. We based the Common Area off of our own experiences with Floor Meetings with our Residential Advisors. The Common Area shares a lot of the same assets with the Class Room and SDCC Locations, so we didn't spend too much time on level design.



Figure 8: Cafeteria

The largest level in the game is the Campus Center Cafeteria. Originally it was going to serve as a shop where one could buy food or drink that could restore health or boost stamina, but we remade it into another hub where you meet May, the physical fitness and Martial Arts party member



Figure 9: Dorm Room

The Dorm Room, perhaps inevitably, serves as the finale to the game. In this fight, you have to contend with the inner demons of your first party member, Sam. We wanted the final battle to be a very intimate setting because depression, both in ourselves and others, tends to hurt those close to each other, and most of the team members can speak from personal experience. Whereas typical RPGs have their final battles be in some deep dungeon, in some obscene temple, or even a on a shattered meteor hurtling through

space, our RPG concludes in a 10x10 Room in a dorm room on a college campus in the Pacific Northwest. That is what Depression does after all, strike us without warning in the places we consider safest and those we are emotionally close to. The actual war-zone, however, is far more fantastical.

Learning How To Create Backgrounds

Every battle requires a battlefield, and *TAMING THE BLACK DOG* is no different. Much like the environments and mechanics of the rest of the game, we had to refer to the classics in order to design the battleground for boss fights.



Figure 10: “Final Fantasy V”

Pictured above is one of the boss screens for “Final Fantasy V”. As you will note, about 80% of the screen is landscape with the remaining 20% being the Mountain Range in the background allowing enough room for four party members to stand on solid ground while at the same time granting scale to the landscape to make the battle more “Epic” in scope despite the relatively static characters.

In order to duplicate the “horizon” found in most RPG boss battles, we had to combine two landscapes into a single image, with one image being relegated to the foreground and the other to the background. Aaron’s artistic vision for the Boss Environments was that of a desolate, desaturated, dreamlike wasteland to represent the psyche and aspirations of an individual in the throes of depression. To that end, we chose “The Burren”, a jagged terrain unfit for human settlement that was described to me “There isn’t a tree to hang a man, water to drown a man nor soil to bury a man”



Figure 11: The Burren

For the background, we decided on using a landscape even more unfit for human habitation...the surface of Mars itself. Named after the Roman God of War, the Red Planet seemed like the perfect inspiration for a battlefield on which the protagonist would have to challenge the eponymous Black Dog for the ownership of their very soul. A dead world that may have once held life at, but was snuffed out under unknown circumstances.



Figure 12: Martian Landscape

We used Photoshop to make a composite of the “Burren” and Martian Landscapes, with the Burren serving as the foreground due to the more “chaotic terrain” and the Martian Mountain Range serving as the background. Due to the phantasmagorical elements of the boss encounter and the fact that you can’t dream in color, both images are desaturated so that they appeared to be part of the same biome rather than two separate planets. Additionally, added barren trees were added in order to the environment to demonstrate that the environment had at one point possessed life, but that said life had

withered and died long ago like the rivers that had carved the canyons of the dream world. Furthermore, the edges and spikes of the mountain range and wasteland were dulled in order to contribute to the dreamlike quality of the boss fight and the intangible blurring of memory. Even beyond the mountain range you can see an aurora borealis devoid of its natural color representing how even the natural beauty that surrounds us in our daily lives can be suppressed by a haze of depression. Finally, to disguise the unsightly schism between the Burren and the Martian landscape and symbolize the pessimism and anxiety of depression, dark clouds of threatening ambiguity were added. Are they preludes to a thunderstorm? A blizzard? The portents of an eruption from a volcano long believed to be extinct prepared to punish mortal man for its arrogance? Some combination of the above?



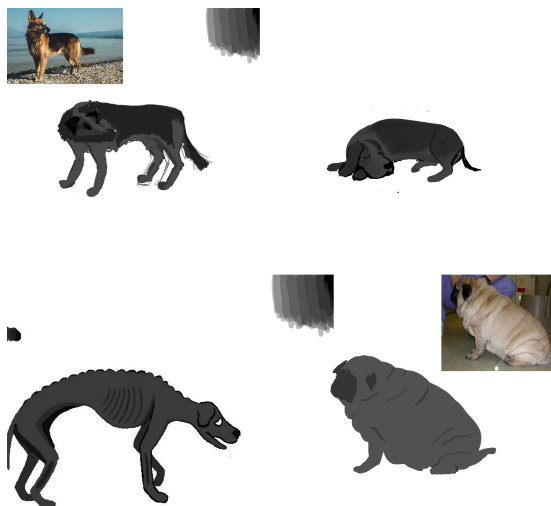
Figure 13: Phantasmagorical Boss Stage.

Designing the Dogs

The dog itself acts as the tangible form of depression, and it was intended to show differences for the various causes and indicators of depression. The four forms that were

decided on are sleep, hunger, social isolation, and atrophy, so each form would need its own distinct design to differentiate it from the others, to make sure players could see and understand what sort of actions they should take in response.

Figure 14: Dog Sprites and Inspiration

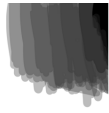


The first drafts for each dog had some basic direction for the species of dog, with the exception of hunger. German shepherds are known to be prone to separation anxiety, and as such they made a good model for the need to socialize. Basset hounds have always been depicted as sleepy or lazy looking in pop culture, and while the choice was not based purely in fact, the appearance fits for a drowsy sleep deprived dog that needs its

rest to feel better. Atrophy was originally referred to as exercise since it was the need to be fulfilled, and as such the first design was based on a pug, a particularly overweight looking one, as it would need to exercise off the weight. In the end this depiction wasn't what the game really needed since the image brought more focus on the fatness as opposed to general need for exercise. A second version was created based on the dalmation, which is known for its energy and need for exercise.

Figure 15:

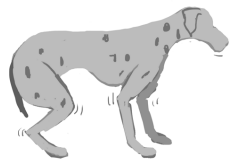
References



Dalmation

Working in

As this was working in pixel art hunger draft served



Pixels

the first time for Kyle, the as a first attempt

to capture form in the more minimal style while still getting the form across. The first

attempts resulted in rather bland and ill defined versions of the dogs, in need of heavy clean up as they started at a higher resolution and were brought down to the desired size. At the time Kyle was more concerned with overall appearance and didn't focus on the color choices as explicitly, instead sticking to grays with an intention of changing the palette at a later time

After a few passes on the hunger form, the focus instead shifted to the socializing dog, since it had a more well defined starting point that made it easier to work with. At first Kyle continued to use the method of making a higher resolution image and scaling it down, though this still resulted in messy edges and poor definition. Following drafts started with fewer colors, and already at the intended size to help take care of these issues. This worked as far as minimizing clean up, but since Kyle still tried to smooth out the transition between different colors there would be more definition on one side and more of a mess on the other. Around this time it was suggested to work in shades of deep purple as opposed to grayscale, since the coloration gives a much darker feel than the grays. In order to get these shades, there was first an attempt to simply shift the images colors. Though the result was lackluster, this new look helped guide color choices for highlights and definition.



Figure 16: Dog Shading Concepts

After this draft, a change in approach would lead to a whole new set of sprites instead focused in the deeper purples, pulling color choice inspiration from comics and characters that have black outfits, which when rendered in color use purple hues. Smoothing the shades between the highlights and shadows was also abandoned, as it never gave near enough definition for the size the dogs were planned to be, and a strict three tone palette would be used for fur and the primary body, successfully making the details pop. This new draft was the first to really feel like it would more easily fit into the RPG Maker environment to

some degree. The eyes were changed to red to help with the intended intimidating look and to help them stand out against all the darker shades around them after this draft made it readily



Figure 17: Second style first

apparent the black didn't differ enough from the surrounding area

Before remaking and reimagining the remaining dogs, a basic animation was made for the socializing version to serve as a placeholder in game for all the dogs should the other primary sprites be incomplete for any reason.

Learning how to Animate

When working in RPG Maker, animations come from the creation and usage of sprite sheets, allowing for frames to be used multiple times if necessary, but of course still requiring a frame by frame creation for the animations. The only work Kyle had done in animation previously had been in 3Ds max and Zbrush, with only some experience in flash, so this was a primarily new task when working frame by frame, especially given the pixelized style. Unfortunately the final animations were not complete in time for implementation into the game for testing, though there were plans to eventually include them.

At first, the idea of simple animations with just two or three frames seemed like a fair possibility when compared to many of the default animations and those used in RPG

maker projects, though the first drafts of this were not what we wanted. Instead they would have smoother animations, albeit still quick and sudden, most with a snap of the jaws at the character the player is protecting. These animations would also help give more character to the dogs as well, their stances and motions dictated by their health and needs. For example, the sleepy dog has much slower movement, letting it's head drop down with the snap and dragging it back to lay atop its paws as it doesn't have the energy, and alternatively giving a swing of its tail when it doesn't even have it in itself to lift its head.

When first redesigning the sleepy dog, the original idea still felt appropriate, with the basset hound remaining the best choice for a sleepy and exhausted looking dog. Rendering the dog in the new style however helped bring out the details that were not captured before,

with the
wrinkles along
its body bunched
up as it lay
curled up and



Figure 19: Unimplemented Sleepy

tired. To maintain the look of force behind its bite, the jowls are left behind as it chomps down, before flopping back in place, the head then moving back to rest atop its legs. In people with depression, this dog can come as either sleeping too much or not sleeping enough. For some it feels like too much to even get out of bed, or it feels pointless to even do so, so they sleep instead. Others can't seem to get to sleep, leaving them exhausted. Even if they know they need to sleep and try to, it simply doesn't come.

Exercise is made to look almost excited, full of energy that it needs to let out as it bounces and wags its tail, like a dog that's ready to go for a walk. In the case of the

depressed individual however, that walk never really comes, so the energy comes out instead in its bites, bounding forward at the protected character. The inaction of the afflicted is rarely just because they don't want to get up, but instead because getting up is difficult, not physically but mentally. This dog is meant to embody that block, where it is ready to go and prepared to play, but approach results in a bite, one that would turn the interaction negative, and make it harder to take that step, making it an increasingly steep hill to climb.

Hunger's design was not originally based on any specific breed, as any dog can fall prey to starvation when not treated correctly, though in order to give it a more defined form based in reality, its final design was based on the whippet, a dog that is already fairly skinny in appearance, in part due to the thinner fur. This helped pull out the shapes of its bone structure, revealed by poor nutrition and general lack of food. The dog has its tongue hanging out, mouth open, as it hungers for anything to eat. In this case it snaps at the character that serves as its host, needing any and all nutrition it can get and harming it's host by doing so, eating away at them from the inside in more way than one.

Learning How To Program in RPG Maker MV

As suggested by Kimi Guo and Aaron Segal, we decided to use RPG Maker MV as our game engine. Before we actually started on the programming, we needed to research the features of the accompanying engine, including its basic functionalities, plugins, and programming language, among other things. Kimi Guo and Aaron Segal were taking responsibility for work on coding, and importing assets from Sean's and Kyle's art pieces, and it took a long time to combine things between art side and tech side. Fortunately, since we had a well-organized plan for each week, we did not encounter too many bottlenecks. Kimi Guo did most of the initial implementation process, before Aaron Segal did several final revises for our game.

As far as the aforementioned research went, most of basic functionalities could be viewed from the official RPG Maker website, so it was a smooth transition for us to start programming, even on a new game engine. Kimi Guo created a test level (See picture 1) to help preview the processes required for mechanics and layouts requested by the team so that later implementation would be easier. We were also allowed to use online resources such as plugins(See Figure 19), which were mainly written in JavaScript programming language. Inside the RPG Maker engine, there is an event system (See Figure 20) that we used mostly to implement pixel art and transformed dialog/actions.

Besides doing event editing, the team had to prepare plugins, which allow team to continue working on advanced game event development.

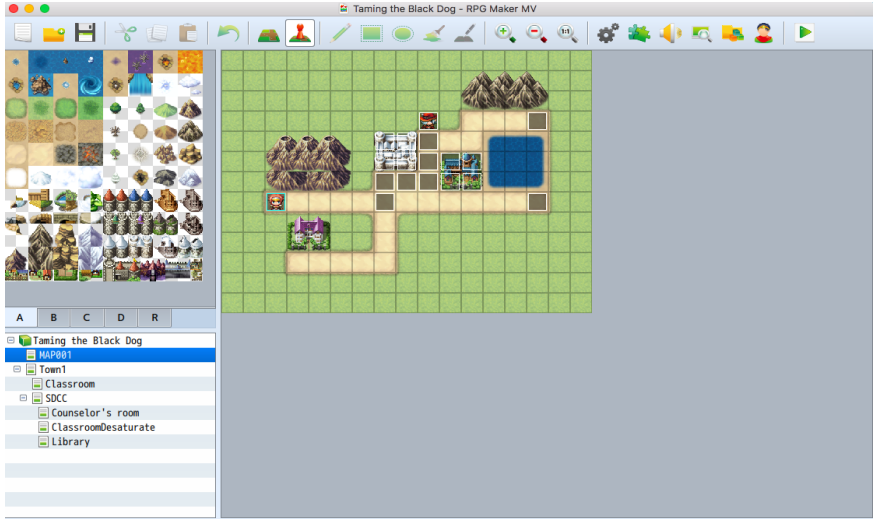


Figure 19: A Screenshot of Test Level

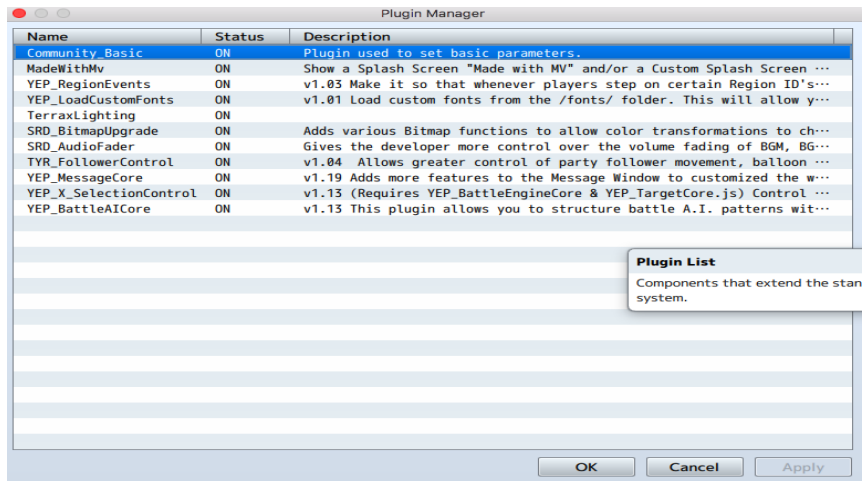


Figure 20: Plugin Manager

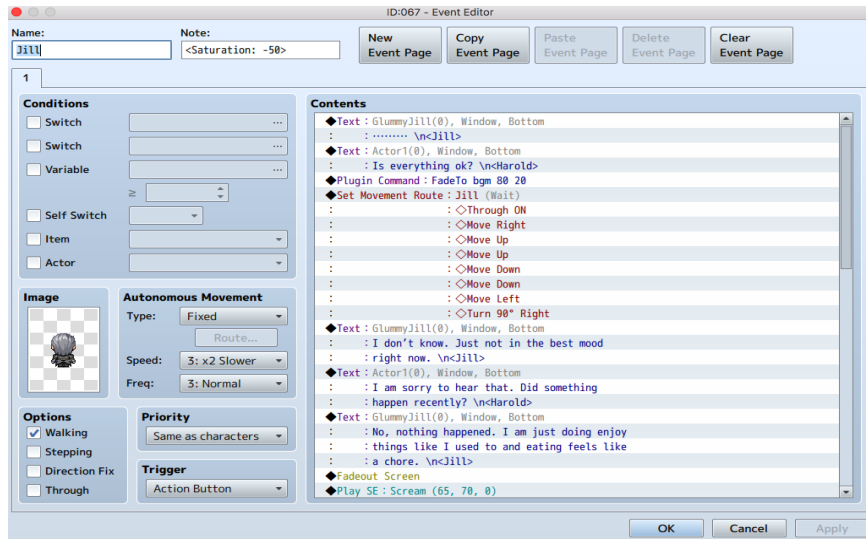


Figure 21: Event System

There was a database(See Figure 21 & 22) inside engine to contain sample tilesets, audio effects/background music, character figures, animations, and it also allowed for personal add-ons to be used during event editing process. Moreover, we did lots of works to completely understand the mechanic of event commands(See Figure 22) since we knew it was the most important part for programming in RPG Maker MV. Event commands are the bread and butter of our RPGs, and the key to making a great game. Most of works we had done was through adding/re-writing event commands, because event commands menu represented all functions to call event, each features or contents inside the game needed to be created and managed by one or more specific commands.

Additionally, the plugins we prepared can be imported to event commands so that we could make advanced and special effects for any single character or tile.

Figure 22 and 23: Tilesets and Actors(Database)

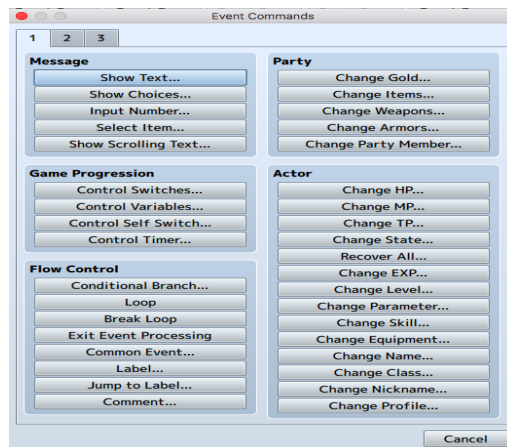


Figure 24: Event Commands



Learning How to Compose Audio

Kimi Guo was taking responsibility on audio design/import during this project.

Since the game can be played smoothly, audio effect was the last thing we had to concern, which could possibly provide better gaming experience and help understanding the purpose of the game. For example, our game purpose was to explain how to overcome depression. However, we could not just make the start of game sounds too horrible or gloomy, because we wished the mood of player during different levels be gradually changed.

In first level, as the initial level in the game, background music should convey a harmonious feeling to player to involve at start, not let player to feel alarmed or panic.

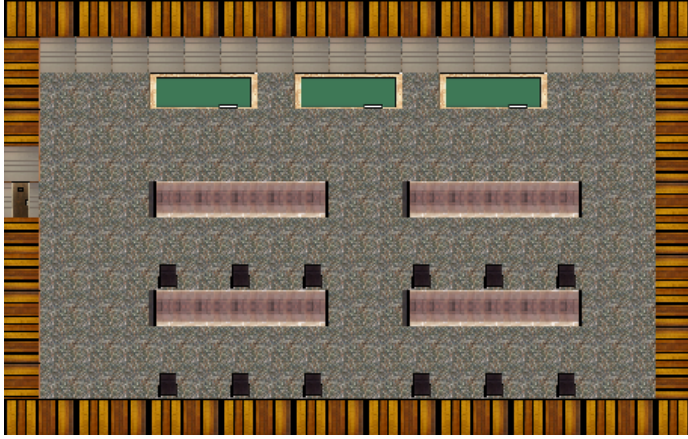


Figure 25: Game introduction level in Classroom

In the combat level, a more thrilling but not shocking type of background music would be appeared to accompany with the adventure/challenging background story, which can increase immersion. Different music cues selected based on a player's



situation, as well as sound effects(physical/magical hit).

Figure 26: Combat Level

Those examples showed how did our audio system construct and what were the purpose to import these audio to achieve the game needs.

Conclusion

Taking an aggregate of the results of Aaron's play-testing groups, the production team of "Taming the Black Dog" believes that over the course of the 2017-2018 Academic Year, we have brought Aaron Segal's brainchild to life. With the combined effort of Sean Welch's environmental design, Kyle Baker's boss design, Junfeng Guo's programming and audio mixing, and Aaron Segal's overall vision, we have created a game that teaches players how to recognize the symptoms of Depression, and how to respond to those symptoms in an intelligent and compassionate manner.

While there is certainly more we could do to perfect the game, such as voiced characters, New Game+ options, and more in-depth combat, and it is unfortunate that animations and some sprite work was not able to make it into the final version, the final product has helped spread the intended message, and the skills we obtained while working on this project will form the foundation of our careers in Game Design.

Image Credits

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