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Final Research Paper

In a competitive scene it is a constant battle of seeing who can improve the fastest. This is no different in the scene of competitive Super Smash Brothers Ultimate. It is all about getting better before your opponents do and then staying on top for as long as possible. Some claim that everyone has to find their own way to improve, that there isn’t a most efficient way of getting better and that you have to hope that your way of improving is good enough to out do your opponents way. I disagree with this, there is a most effective way to train and improve that will allow you to get ahead of your opponents and increase your win rate in Smash Brothers, and that way is through a regular training schedule. So in this paper I want to ask, what are the effects of having a training schedule in Super Smash Brothers Ultimate. Could training be a key to success for every player or only certain individuals.

The first thing that regular training will improve that will allow you to increase your win rate is spatial reasoning. Spatial reasoning is defined as “the mental ability to think about objects in three dimensions or transform 2D flat graphic representations into 3D objects.” (“The Spatial Reasoning Test”). Spatial reasoning as many applications to Super Smash Brothers Ultimate and when talking about spatial reasoning it is important to know what it means in the context of Smash Brothers. Super Smash Brothers is a 2D platform fighting game, in a competitive game there are usually only two players. Both players control one character and they both fight each other on a small 2D map that may or may not have platforms that the characters can use. In this game spatial reasoning refers the ability to properly judge distance between your character and your opponents, along with miscellaneous objects such as platforms or items. It isn’t just your ability to judge horizontal distance but also vertical. It also encompasses understanding the distance that certain abilities will allow your character to travel in order to reach specific destinations. This means also being able to judge distance properly at hundreds of different angles that your character may end up in. Simply put spatial reasoning is the ability to judge distance between your character and the world the character inhabits at any and all angles.

The second thing that regular training will improve that will allow you to increase your win rate is your reaction time. The Merriam-Webster’s dictionary definition of reaction time is, “the time elapsing between the beginning of the application of a stimulus and the beginning of an organism’s reaction to it.” In simpler terms this would be the amount of time it takes someone to react to an event occurring. In Super Smash Bros this is the amount of time it takes for you to react to a move taken by your opponent. In Smash Bros time is measured by frames, with the game being 60 frames per second that means each frame is 1/60th of a second. Some moves only take 1frame to activate, while others can take as long as 60frames. Depending on the speed of a move is how easy or hard the move is to react to. Reaction time is how many frames it takes a player to react to a move. There are also two different types of reacting when it comes to the game, there is prepared and unprepared. Prepared reaction is when you are expecting your opponent to make certain moves, so you are prepared to react the moment the move comes out. Unprepared reaction is when you are not expecting a move and are forced to spontaneously react to it. Both types of reaction are very important and will play a major role in the outcomes of games.

The final thing that a regular training schedule with help improve is your technique. There isn’t a rigorous definition of technique in regard to Super Smash Bothers Ultimate. But what I will be referring to is one’s ability to consistently pull-off character specific combos and difficult movement. In Smash Bros every character has their own set of combos and special tech that allows the character to do more damage, play safer, or move faster. A great example of this would be the character, Luigi. The green plumber is known to be the one of the most combo-based characters in the entire game. You have to be able to string together very specific inputs at correct timings and adjust everything based on what your opponent does. If successful you could instantly kill your opponent, if failed then you are near guaranteed to lose. Along with this there is character specific tech like wave-bouncing for Roy and Chrom, or float-cancelling for Princess Peach. Technique refers to the ability to consistently master all of these moves for your character, and it is vital to the success of your game play.

The reason that it is important to have a regular training schedule, and to improve at the three previously stated areas is in order to increase your win-rate in Super Smash Brothers Ultimate. If anyone wants to get farther in the competitive scene that means that you have to win more games. And what this paper is about is proving how implementing a regular training schedule will help to increase your win rate. Now I will explain why the previously stated reasons are required for Super Smash Brothers Ultimate.

The first required skill for improving in Super Smash Bros Ultimate is Spatial reasoning. Spatial reasoning is required for the following reason. It keeps your character the preferred distance from your opponent’s character to allow you to do damage while avoiding taking damage. Super Smash Brothers ultimate is a game where the more damage you take the higher chance you get killed by your opponent. If you get killed three times you lose, because of this the less damage you take the more likely you are more likely to win. Some examples of this taking place would be player one has a move that reaches one unit and takes three frames to activate. Player two has a move that reaches two units and takes eight frames to activate. Since player one's move activates faster, he would be the one to damage player two if both players attacked at the distance of one unit. However, if both players attacked at the distance of two units it would be player one that took damage, because player one's move comes out faster but doesn't reach player two, while player two's move does reach player one. The value of spatial reasoning is also stated in the article The Structure of Performance and Training in Esports. In the article it states that spatial abilities increase your skill in esports such as Rocket League. While Smash Bros is a much different game than Rocket League, they share certain attributes such as spatial reasoning, which is covered in the term spatial abilities.

The second required skill to improve at Super Smash Bros Ultimate is reaction-time. Reaction-time is valuable for the following reasons. It allows you to properly punish your opponent's character for making mistakes, it increases your ability to avoid taking unnecessary damage, and deal damage when you would be otherwise unable. Firstly reaction-time allows you to properly punish your opponent for making mistakes. After your opponent commits to doing an attack that is considered unsafe, you have the opportunity to attack the opponent for having done said unsafe move, but only if you react fast enough. An example would be your opponent commits to a move that has thirty frames of animation. This means you have thirty frames to get your character into position and attack them back. Let's say it takes your character five frames to get into position and seven frames to unleash your own move. This means you have to react and start moving your character within eighteen frames. This means you have 0.3 seconds to react to your opponent committing to their thirty frames move. Secondly reaction-time increases your ability to avoid taking unnecessary damage. There are many moves is Super Smash Brothers Ultimate that are projectiles and have travel time. This means that there is a gap of time between the projectile being released from the opponent to the projectile hitting you. Within that gap of time you are able to do a defensive option such as jumping, ducking, or shielding to avoid getting hit from the projectile. There are many similar situations throughout the game that involve your opponent attacking you and so long as you have a good enough reaction time you should be able to avoid taking the hit. Lastly it allows for you to deal damage to the opponent when you wouldn’t be able to otherwise. Throughout the game you will put your opponent in a position in which they are trying to avoid taking damage from you as you relentlessly attack them. In these scenarios being able to react to whatever defensive option your opponent goes for is paramount to dealing damage to them. A great example of this is when you have your opponent hanging on the edge of the stage. You opponent has four options that they can go with, one they can just get up, two they can jump, three they can roll behind you, or four they can attack you. Being able to react to whichever of the four options your opponent picks is the only way to damage them. If you are too slow to react then they will escape you and you will have lost your chance to kill them.

The final skill required to improve at Super Smash Brother Ultimate is technique. Every character in Super Smash Brothers is unique and because of this each character has its own tech that needs to be mastered in order to play the character to its full potential. Many characters require specific tech in order to consistently deal damage or secure kills. Other characters have very unique tech that their entire character move set revolves around. An example of this would be the character Peach. Peach has a unique ability to float in the air whenever she wants, you can cancel this into attacks allowing you to do moves that can only be done in the air extremely close to the ground. If a Peach player is unable to master this tech, they will really struggle to improve their gameplay no matter what they do.

Now having explained the value of everything that a training schedule can help you improve, it is time to discuss the training schedule itself. A training schedule is when the player takes time to write down and map up each day of the week and write how much time they will spend practicing Super Smash Bros. You have to be very specific; it is not giving a general amount of time you will spend on any random thing. You have to write down each day, the amount of time you will spend practicing, when you will spend time practicing it, and what exactly you will be practicing during this time. The importance is the amount of detail that you put into creating the schedule. The more time you spend on it and the more detailed you make it the more likely you are to follow through with it.

Now to explain how having a regular training schedule will increase your spatial reasoning, reaction time, and technique. Proper time management is important as Alfonso J. Martinez goes over in his Journal of Psychoeducational Assessment. Without proper time management you are more likely to fall into procrastination and procrastination correlates to less degrees of success in the field you are working in. This is the same with Super Smash Brothers Ultimate. Having a proper schedule will decrease the likelihood of you procrastinating on your training of spatial reasoning, reaction time, and technique. In order to improve in the game you need to improve at spatial reasoning, reaction time, and technique and you are only going to improve at these things through hours of practice. Most people wouldn’t consider this type of training to be very fun. That does not change the value of this type of training, but because people don’t really like to do it that means that they are more prone to find ways to avoid doing it. And the more you procrastinate this type of training the slowly your improvement is going to be. That is why you have to have a training schedule, if it is something that you have manually set time aside for and have written down that you are going to do it then you are significantly more likely to do it. This is why the number one tip on getting started with esports training is to create a gaming practice schedule (Vejvad and Dan).

Having a regular training schedule will increase your win rate in Super Smash Bros Ultimate. Just like it is necessary in other esports Smash Bros is no exception (Nagorsky, Josef). A regular training schedule will help you develop habits that are necessary for success in Smash Bros. If you are unable to consistently practice and improve then you are bound to fall behind the competition. If you do not plan out your daily activities you are not guaranteed to follow through with them, if you haven’t previously decided what you are going to work on you find yourself not focusing on anything. Instead of trying to improve one area you are more likely going to try to improve on multiple unrelated things all at once and no progress is going to be made. This is why it is very important to make sure you have a regular training schedule.

Having a regular training schedule. Will increase your win rate in Super Smash Brothers Ultimate, because having a regular training schedule will increase your spatial reasoning, reaction, and technique. It is very important that future players understand this, for all of those who are trying to improve and don’t know where to start, they need to learn the importance of setting a training schedule. Otherwise they will find it difficult to consistently improve and will notice that they are more likely to fall behind other players. I fully understand that what I have written is missing a lot of information and overall needs tons of more research. I have found that the current research done on this topic or on topics similar to this are very few and far between. Given enough time I would like to be able to run some studies on taking some new players and have them follow and exact training schedule and see what the results are. As well as taking some other new players and have them improve by simply playing the game and as they see fit and see what the exact result would be. Also finding out what exact type of training schedule would be the best would also take a lot of studying but I would love to try. Most research for this topic were on similar topics that could be applied to Smash Bros. But for anyone interested in researching how to improve further there is a lot of research that would be much more effective if done directly on Smash Bros and not other esports.

Citations

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Conference:

## Game Studies Area: 2022 PCA/ACA National, this is the conference that I would attend for this paper. It is a conference that focuses on all aspects on gaming and that is exactly what my paper is on. It would be nice to find out how other people manage to find research on video games because I have found it incredibly difficult to.

## Journal:

## the international journal of computer game research, turns out this journal also does papers on console games. I would like to have a lot more research done before I even thought of a journal looking at my paper, but this is the one I would pick. It solely focuses on articles that are on video games, and that fits the parameters of my paper perfectly.