All Azerothians Are Created Equal

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Introduction

The massive multiplayer online role-playing game (MMORPG), *World of Warcraft (WoW)*, has become the most successful computer game in recent history, with players averaging 510 minutes of gameplay a week (The Nielson Company). Throughout the game, Blizzard has created hundreds of zones and thousands of quests to enhance the gaming experience. Questing involves fulfilling an objective given to the player by a non-player character within the game, usually to be rewarded by items, currency, and experience. Quests function as a plot device in *WoW* and are used to introduce the mechanics of gameplay to new players. Quests may have players killing monsters, purchasing items from vendors, or collecting loot from various regions in the game. In Hilde G Corneliussen and Jill Walker Rettberg's book *Digital culture, play, and identity: a World of Warcraft reader*, they identify questing and killing monsters in the game to be the most effective method of gaining experience points (xp) (Corneliussen and Rettberg 6). The concept of efficiently leveling characters within *WoW*, through either questing or killing monsters is the foundation of this project. The incentives offered through the in-game quests drive players to fully experience the game and progress through its content. In her analysis of *WoW*, Jill Walker Rettberg breaks down the quests into three types: killing quests, gathering quests, and exploration quests (Rettberg 168).

Killing entails a quest giver asking for the eradication of a certain number of game creatures. The first quest in the Blood Elf starting zone requires that the player kill 6 Mana Wyrms. In exchange for their services, the quest giver offers 30 copper coins, 100

experience points, 250 reputation points with Silvermoon City, and the gamer's choice of a pair of Green Chain Boots or a Wyrm Sash.

Gathering involves a quest giver asking for the player to find a certain number of items located in the vicinity. Another quest given in the Blood Elf starting area requires that the player search the zone for 3 items labeled as Solanian's Belongings. The gamer is required to find a Journal, an Orb, and a Scroll. Once the items have been collected, the gamer can return for a reward.

Travelling generally involves the quest giver sending the gamer to explore a new area or talk to another quest giver in a new geographical region of the game. After completing the quests in the Blood Elf starting zone, the gamer is given a quest to travel to the next area. The quest "Aiding the Outrunners" has the gamer running to a new zone to speak with Outrunner Alarion. The quest introduces the character to the next zone that they should quest in. The Quest also offers the player a reward for traveling to this new location.

These three questing types provide an unchanging backbone for the *WoW* experience from the first quest at level 1 all the way to level 85. Mobs or mobile objects imbedded within the game serve as an enemy to *WoW* players. They may take the shape of human bandits, dragons, ghosts and numerous other forms. Killing these mobs rewards the player with a set amount of xp. Players may chose to grind a certain group of mobs, meaning they will repeatedly kill the mobs to gain experience. Killing enough of these mobs and gaining xp will result in the character attaining a higher level, opening up new abilities and game content for the player to explore. A player can level solely through killing mobs, solely through questing, or a combination of the two. The clear benefit of a mixed

method for leveling is that the player receives xp for killing each mobs and a large amount of xp for turning in quests related to killing those mobs. While quests do not always revolve around killing, quests given to travel to new areas or gather certain objects often embed the player in a field of killable mobs. The synergy between the two styles of gaining xp is consistent throughout *WoW.* It is the loyalty to this leveling structure that makes *World of Warcraft* easily adaptable to all levels of play and to all levels of gamer skill. The leveling mechanics of questing and grinding do not change with character abilities, race, or level. For this reason, players should perform consistently in terms of xp generated per minute with little to no impact from class, faction and level changes. Killing wolves for a quest as a human is no different than killing scorpids for a quest as an Orc. Since the mechanics do not change with level, there should be no difference in killing Scarlet Peasants as a level 55 Death Knight. Once a player understands the mechanics of questing and grinding in *WoW*, they will be able to level with relatively equal efficiency regardless of changes to gameplay.

In Rettberg's analysis, she fails to address the effects of the questing system as a whole, on the ability of the gamer to master the game. The loyalty Blizzard shows the three-quest format allows players to gain xp through questing regardless of character level. The quests themselves never progress to more complex objectives. The simple structure of the questing system promotes consistent character progression regardless of character level. The player quickly learns that finding an NPC with an exclamation point over his or her head will result in one of four outcomes. They will be required to kill a certain number of enemy characters, gather a certain number of in-game items, travel to some in-game location, or possibly a combination of these actions. In BA Nardi's book *My Life as a Night*

Elf Priest, she addresses the issue of repetitiveness in the game *WoW*. She explains how the reward system in the game is designed to give a positive outcome to completing the same task over and over again. The questing system in *WoW* falls into this pattern. By farming quests, gamers complete the same system of tasks over and over again, each time seeking greater rewards. Nardi explains that the rewards can offer a positive emotion to the monotonous activity but fails to address the effect of repetition on gamer performance (Nardi 113). In Mem's blog, "Casually Casual", found on the *WoW* related website *TenTonHammer*, he laments over the repetition of questing. Mem describes the questing system as mind numbing, repetitive, and obnoxious. While these words hold some heavy connotations for gameplay experience, they fail to address the effect of repetitive questing on the ability for players to efficiently level in the game. It is this gap that we will address in our research paper. The questing system is unanimously repetitive. Previous research fails to address the effect of this repetitiveness on gamer efficiency. We rate efficiency as the amount of xp generated over a given time.

The process of leveling a character in *WoW* has been researched before. In their paper "Building an MMO with Mass Appeal", Nicolas Ducheneaut et al. analyze the leveling process of characters within given realms. They conclude that leveling adheres to a specific formula (Leveling time = (current Level x 14.0) -44) regardless of character level within the game. This formula was obtained by analyzing the mean time of character that leveled in a given realm. The formula is not completely accurate, however, as a level one character would require negative 30 minutes to reach level 2. It does however show that character progression is a method for analyzing gameplay. Ducheneaut et al. also fail to address the low learning curve inherent in *WoW*. The ability for a player to understand the leveling

system is directly proportional to the amount of xp generated in a given time. By testing a convenience sample of experienced and inexperienced players of *WoW*, we hope to prove that regardless of class, race, and level, the leveling system remains relatively the same. The game requires a set amount of experience to reach each new level, and questing and grinding between different areas of similar level yields similar xp. These constants should effect player's leveling consistently. As such, the ability for players to generate xp through questing and killing mobs will not differ based on character abilities, in-game geographical region, and to some extent, player ability. The formula *WoW* has created makes the progressing through the game an intuitive and familiar process.

Method

Qualitative and quantitative methods were used within this study. We began with sampling the three members of the investigation team. These three sets of data provided a preliminary outlook on how the data should look and what methods were and were not appropriate. We gave ourselves the task of progressing from level 1 to level 5 as first, a Night Elf Rogue, second, an Orc Warlock, and third, a Dwarf Hunter. For each of these characters, the total time played from level one to five was recorded as well as the total amount of experience gained to achieve levels 1 through 5. The initial sample consisted of two male, gamer, *WoW* players, and one female, non-gamer, *WoW* player. After initial data collection, we revised our plans and begin to broaden our data to a larger variety of people.

The convenience sample consisted of 9 people. All of the participants were either family or friends and were individually approached and asked if they would like to

participate in our research project. When the project was explained to them, and consent was given, we began our data collection.

The subjects were asked their age, sex, whether or not they would consider themselves a gamer, whether or not they have played World of Warcraft before, and what unique anonymous identifier they would prefer. In order to better understand these questions, the investigation team came up with formal definitions for each term.   This eliminated ambiguity when asking the questions to participants. A gamer is defined as a person who plays multiple types of video games, ranging over multiple types of platforms, and who plays games more than once a week. Playing *WoW* is defined as first-hand exposure to the game for more than the first 5 levels in-game, or any equivalent firsthand exposure.

After polling the participants, they were told that the goal of our research was for them to play levels one through five, three times as three different races and classes, and then play on a higher level character (the Death Knight) for the mean time it took to play the first three characters. The participants were informed that the objective of the play session was to reach the fifth level in-game as fast as possible, using whichever method determined appropriate by them. This was to be done with four pre-determined characters: a Night Elf Rogue, Orc Warlock, Dwarf Hunter, and Death Knight. The Death Knight's race was determined by the participant, as the Death Knight's race does not affect the starting area experience. Participants, if needed, were told that the game uses the WASD keys as well as the mouse to interact with the environment and nothing else. Once each character was set up for them, the participants were allowed to customize their avatar however they saw fit and were allowed to choose their avatar's in-game name. When the

"Enter World" button was selected the investigator left the participant alone, by either leaving the room entirely or remaining in a non-obtrusive manner. *WoW* has an in-game tool that records the total time played on each character, in order to gather the information the command "/played" must be entered in the chat field in-game. Once the participant had completed their objective, they were instructed to enter "/played" into the game chat field. The time and the amount of experience in excess of 4800 was recorded.

Participants were given the option to complete each objective required as their time permitted. If the participant wanted to play through all 4 characters in one sitting, if they would rather complete each objective over one week, or any combination of the two was allowed to keep each participant as comfortable as possible in the testing environment.

Each participant's data was recorded into an aggregate spreadsheet for analysis. In order to solve for discrepancy between the amount of experience required to level between the first five levels and the Death Knight's starting level (level 55) the team defined a "Death Knight experience factor." The Death Knight experience factor is the amount of experience gained during a participant's Death Knight play through divided by the mean Actual Experience gained. Actual experience gained is the experience required to level from one to five (4800 xp) plus the experience over level 5. All calculated data was rounded to two decimal places, and time was recorded as hour : minute : second.

Results

Ten samples were taken in our study including our initial sample of three. Because of the small sample size, t-scores were used throughout the data analysis. The mean experience per minute, or xp/min, of our data was 165.94 (σ=57.66). This doesn't tell us

too much about our hypothesis, so to analyze the data more, we split it up into three categories: gender, gaming, and *WoW* experience. Males xp/min (n=7, μ=177.26, σ=29.67) was greater than females (n=3, μ=139.55, σ=37.67), gamers xp/min (n=5, μ=191.06, σ=38) was greater than non-gamers (n=5, μ=140.84, σ=26.14), experienced *WoW* players xp/min (n=4, μ=225.81, σ=50.27) was greater than non-experienced *WoW* players (n=6, μ=126.04, σ=50.27).

In order to allow for sampling error, we created confidence intervals for the differences in the means of each category. Although we saw differences in each sample, there were only significant differences in the means of the gaming category and the means in *WoW* experience category.

95% confidence interval results:

μ_1 : mean of Females

μ_2 : mean of Males

$\mu_1 - \mu_2$: mean difference

(without pooled variances)

Difference	Sample Mean	Std. Err.	DF	L. Limit	U. Limit
$\mu_1 - \mu_2$	-37.71	24.46974	3.131072	-113.772	38.35161

Table 1

95% confidence interval results:

μ_1 : mean of Non-Gamers

μ_2 : mean of Gamers

$\mu_1 - \mu_2$: mean difference

(without pooled variances)

Difference	Sample Mean	Std. Err.	DF	L. Limit	U. Limit
$\mu_1 - \mu_2$	-50.22	20.62668	7.093014	-98.865	-1.57501

Table 2

95% confidence interval results:

μ_1 : mean of Experienced *WoW* Players

μ$_2$: mean of Non-experienced *WoW*
Players

μ$_1$ - μ$_2$: mean difference
(without pooled variances)

Difference	Sample Mean	Std. Err.	DF	L. Limit	U. Limit
μ$_1$ - μ$_2$	-99.77	26.42036	3.638339	-176.092	-23.4477

Table 3

As seen in Table 1, we cannot say, with 95% confidence, that the mean xp/min of

males is different than females (Lower Limit: -113.772, Upper Limit: 38.35161). The

confidence interval for the difference between the means of males and females has a range

between negative and positive numbers. The range between negative and positive values

represents an intersection of confidence intervals. Since the intervals intersect, we cannot

statistically say there is a difference between the mean xp/min of males and females.

However, as seen in Tables 2 and 3, we can say, with 95% confidence, that the means of

gamers and non-gamers are the same (Lower Limit: -98.865, Upper Limit: -1.57501), and

the means of experienced *WoW* players and non-experienced *WoW* players are the same

(Lower Limit:-176.092, Upper Limit: -23.4477).

To double check our findings above, we decided that the 4 trials collected from each

participant were just a sample of a larger population of trials. Therefore, we created 95%

confidence intervals for the possible means of xp/min that each participants could have

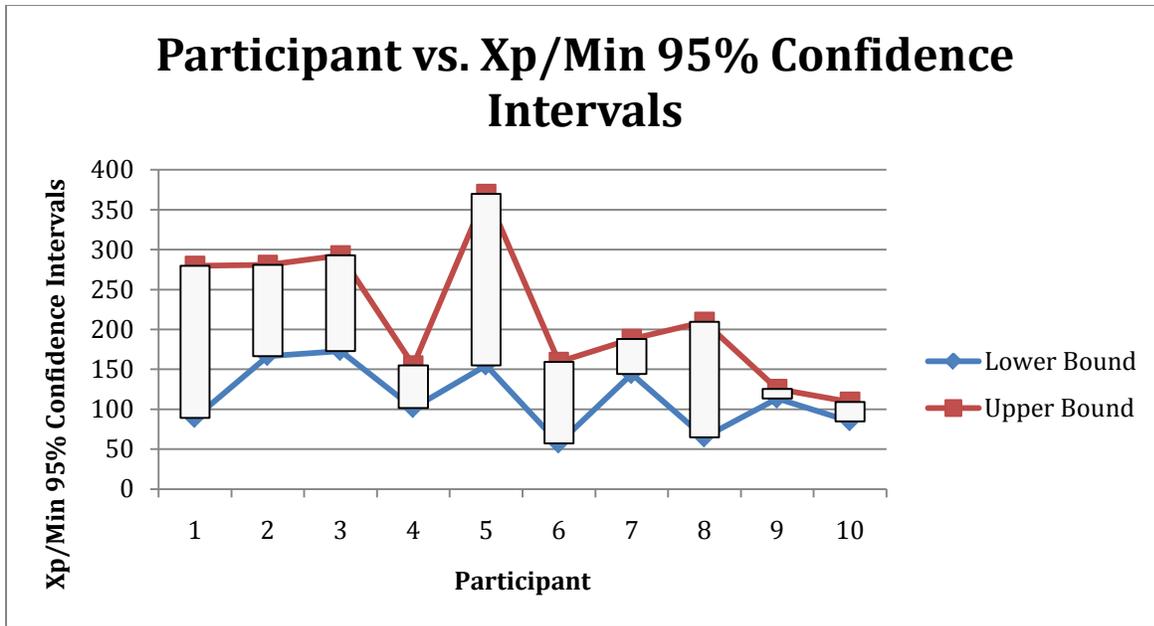had if they did more trials. The confidence intervals created are plotted in Figure 1.

Participant vs. Xp/Min 95% Confidence Intervals

Figure 1

Out of the data, 66% intersected with one another's confidence intervals; meaning that nothing conclusive as to the relationship of those 66% can be said. We wanted to check to see why these confidence intervals conflicted with our findings above, and what the other 33% of data was. In order to visualize the data we created a Two Way ANOVA Contingency Table which shows those confidence intervals that intersect with one another.

Two Way ANOVA Contingency Table:

Participant	1	2	3	4	5	6	7	8	9	10
1	-	Y	Y	Y	Y	Y	Y	Y	Y	Y
2		-	Y	N	Y	N	Y	Y	N	N
3			-	N	Y	N	Y	N	N	N
4				-	N	Y	Y	Y	Y	Y
5					-	N	N	N	N	N
6						-	Y	Y	Y	Y
7							-	Y	Y	Y
8								-	Y	Y
9									-	Y
10										-

Legend:
Y: Intersect
N: Do not Intersect

Table 4

Table 4 shows that the confidence intervals from Figure 1 do indeed agree with our analysis of the data at the beginning of this section. The reason we saw that 66% of the data's confidence intervals intersected was because 60% of the data was not experienced with *WoW*. Those participants who fell within the same *WoW* experience sub category performed similar to one another. As seen in Table 4, participant 4 (μ=128.21, σ=16.76), a male, gaming, non-experienced *WoW* player, performed similarly to those participants who had no experience with *WoW* (participants 4, 6, 7, 8, 9, and 10). Though participant 4's confidence interval intersected with participant 1's, a *WoW* player, this can be explained by participant 1's large standard deviation (σ=59.9). On the other hand, participant 5 (μ=262.26, σ=67.53), a male, gaming, experienced *WoW* player, compared similarly to those participants who had experience with *WoW* (participants 1, 2, and 3).

There was a strong positive correlation between mean xp/min and the Death Knight Experience Factor (ρ=.84, ρ²=.75). The regression model of xp/min was 10.786 x - 43.432 where x is the Death Knight Experience Factor.
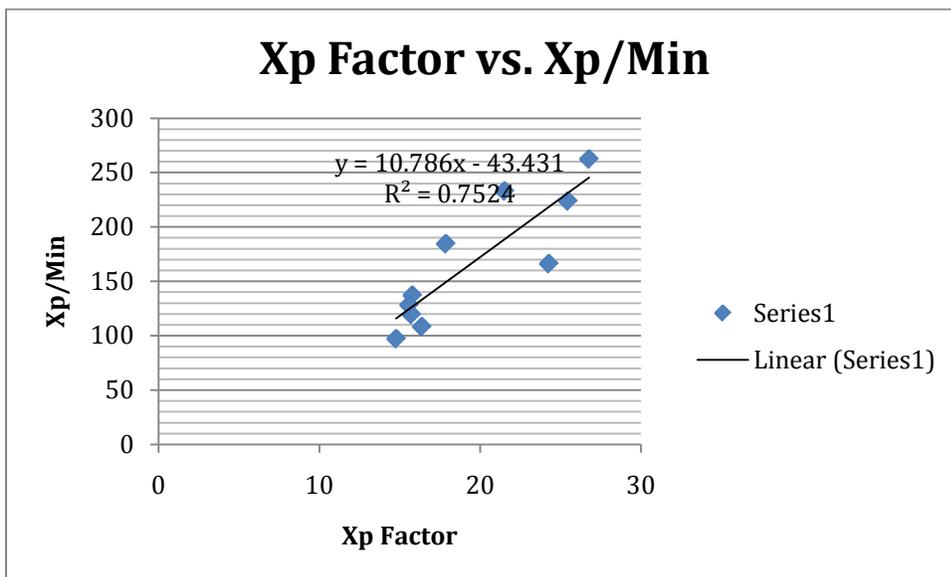
Figure 2

As seen in Figure 2 for every increase of 1 point in the Death Knight Experience Factor there was an increase in 10 experience points per minute.

To make sure that our data agreed, we continued to create another multiple linear regression model for the Death Knight xp/min vs. the mean xp/min of a participant. There was a strong positive correlation between the Death Knight xp/min and the mean xp/min (ρ =.84, ρ^2=.75). The linear regression model was 31.328x - 1895 where x is the mean xp/min of a participant.

Mean Xp/Min Vs. Xp/Min DK
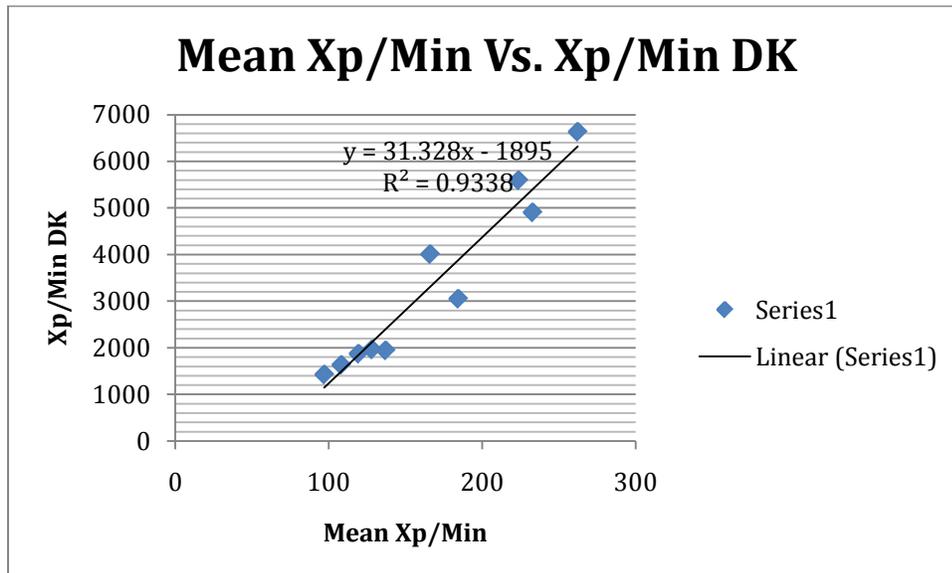
$y = 31.328x - 1895$
$R^2 = 0.9338$

Figure 3

As seen in Figure 3, for every increase of 1 in the mean xp/min of a participant, the participant's Death Knight xp/min would increase by 31.328 xp/min.

Moving on from game-player variable analysis, we shifted our analysis to gameplay. Knowing there was a relationship between *WoW* experience and the performances of participants, we wanted to analyze how our in-game variables affected the performance of participants. We began with a One Way ANOVA Test of the gameplay variables (α=0.05).

ANOVA table

Source	df	SS	MS	F-Stat	P-value
Treatments	3	11331.61	3777.202	0.895346	0.453
Error	36	151873.4	4218.706		
Total	39	163205			

Table 5

According to Table 5, the mean xp/min of each participant's play through of the

Rogue, Warlock, and Hunter class were the same. The p-value for the F Statistic was 0.453

which is greater than our level of significance of .05.

Discussion

The hypothesis that the gaming structure of *World of Warcraft* allows equal

character progression regardless of Race, Class, Zone, and level was corroborated by our

data. Initial analysis of the data indicated that there was a marked difference in player

performance. However, each individual participant performed consistently throughout

each of his or her four play sessions. The data from the convenience sample showed that

even though each player performed differently based on variables such as *WoW* experience

and gaming experience, we can say with 95 percent confidence that individual players will

obtain the same amount of experience per minute regardless their character's class, race,

and zone. Even though the experienced *WoW* players and non-experienced *WoW* players

data varies, the data is consistent for each of the four play sessions.

The data shows that there is a direct correlation between previous *WoW* experience

and in-game performance. This reinforces the hypothesis that the gaming mechanics

present in *WoW* are consistent throughout the game. Players familiar with *WoW* have

learned the mechanics during their previous game experiences. As such, they are more

adept at moving through game content than non-*WoW* players resulting in an overall increase in experience gained.

More importantly, the data shows that regardless of in-game choices such as class and race, players will perform consistently throughout each play session. Differences in methods of in-game combat, quest text, and zone layout have little to no correlation on in-game performance for individual participants. According to the data, players will always perform differently based on previous experiences. However, the in-game mechanics support a level of efficiency consistent with a player's ability.

This study was aimed at analyzing a very specific niche within the game, early game character progression. The game is designed to funnel players through the early levels with little thought given to class or race. Future research may address the effects of race, class, and zone on more complex aspects of the game such as succeeding in defined group roles like tanking and healing. Concepts such as in-game money making could also be analyzed with respect to race, class, and player experience. Determining whether player experience and gold making methods has more of a correlation than class and race is a possible follow up to this research. Testing any of the mechanics built into the game and determining whether subtle changes such as race and class have a correlation provides numerous research opportunities for those interested in studying *WoW*.

Player experience could be analyzed to determine why the linear regression model was linear opposed to exponential. One might assume that a skill-based task such as leveling would result in an exponential model, the more experienced a participant is the more experience gained. However, the regression model shows that skill level acts more like a ladder than a progressive system. For instance, when a person learns a more efficient

way to gain experience they increase their leveling efficiency by a stepped amount.

Therefore, by studying the mechanics of the game it might be possible to determine if there

is an upper limit to how efficient a player can be at leveling.

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