Tab 1

Quantifying The Win.

Abstract: This project explores the ways in which advanced mathematics and statistics can be applied to improve performance in youth basketball. Unlike professional teams with data analysts on the payroll, most junior varsity teams get by with little observation and coaching experience. With a desire to replace this lack, I worked with the Tagalog Tigers, a local JV basketball team, and developed two new measures of performance: the Two-Way Effectiveness Score (TWES) and the Offensive Effectiveness Score (OES). TWES measures a player's non-scoring and defensive work, while OES estimates offensive efficiency through a combination of box score metrics and a sigmoid-based efficiency adjustment. I applied these equations to analyze three games to find the strengths, weaknesses, and optimal player roles of the team. Results indicated that the team's 2-3 zone defense earned low hustle scores (average TWES of 4.46) and that not many players were scoring efficiently. Based on this analysis, I recommended strategic adjustments including a switch to man defense, shifting certain players to alternative positions, and emphasis on ball movement. After implementing these changes, the Tagalog Tigers significantly improved, transforming from an 0-4 beginning to a playoff run that ended in a championship win. This project shows how mathematical analysis can make a dramatic impact on sports performance at the junior level, highlighting the real-world applications of mathematics outside of the classroom.

Introduction: In professional basketball leagues such as the NBA, EuroLeague, and even the G League, every team employs people who analyze mathematical data in order to give coaches feedback on where they need to improve and what adjustments need to be made. However, at the youth basketball level, nobody is working with teams in this manner. I decided to partner up with a local Junior Varsity level basketball team in order to help them win games using advanced mathematics and statistics. This team, known as the Tagalog Tigers, first caught my eye when I saw them playing at my local fieldhouse basketball arena for the first game of their season. Their coach was visibly frustrated with the way his team was playing. Many players were missing layups, shooting low-percentage shots, and they were getting blown-by on defense. After the coach talked to his team after the game I went and offered to work with him and his team to help them win. I offered to analyze the next three games by keeping track of stats and watching game film. Three games was a good sample size for me to get a better understanding of the team.

Defining the Problem: After watching the second game both in-person and on film I realized the team's biggest problems: first, the team was mighty inefficient— in that game they shot a mediocre 32.8% from the field— and second, they were not playing structured basketball. Almost every person on the team was trying to be the primary scorer yet nobody was trying to

play any other critical role like being a 2-way corner specialist or a solid post defender. As a result of these two problems I identified, I decided to create two advanced statistics to both prove to the coach that these were valid problems that needed to be fixed and present to him which players he should utilize more and less.

Two Way Effectiveness Score: I decided to call the first equation the TWES, two-way effectiveness score. The purpose of this stat is to reflect how much a player contributes when they're not scoring. This is so important in youth basketball because players' per-game point totals tend to fluctuate heavily from game to game due to a lack of consistency. A player who is able to impact a game without scoring is very valuable to a team and is hard for a coach to take out of the game. The full TWES equation is the following: ((1.1)* STL + (0.8) * BLK + (1.2)* REB + (0.6) * OREB) - (1.0) * TOV + (1.0) * FLS)(S). STL stands for steals, BLK stands for blocks, REB stands for total rebounds, OREB stands for offensive rebounds, TOV stands for turnovers, and FLS stands for fouls. In the first parenthesis are the box-score stats that are relevant to two-way play. Each of these stats is attached to a weight that was determined by how much they can impact a game. A steal is multiplied by 1.1 because many steals lead to easy fastbreak opportunities. In a close game a defensive stop or easy bucket can alter the trajectory of a game. Blocks are multiplied by 0.8 because while they can be considered a defensive punctuation mark and momentum-shifting, they don't change the possession arrow as often as steals and they lead to points less-often than steals. Rebounds are valued the highest in this group at 1.2 because they mark a defensive stop or offensive continuation. Offensive rebounds are included in this group because while they are a part of total rebounds, an offensive rebound can lead to a score around 70-90% of the time according to the NBA Television Broadcast *NBA on TNT.* Turnovers and Fouls are both valued at 1 because they have similar negative effects on a team and they are as common as each other. The S stands for piecewise. As I mentioned before, a player who can be effective without scoring is so valuable to a team because they can play hard on defense which leads to more stops, and they can extend a play on offense. This extra impact is valued by all coaches, and it forces coaches to keep these types of players in for the majority of a game. In addition, a player who plays 30 minutes in a game is going to have more of an impact on a game than a player who only plays ten minutes. The piecewise function is as follows:

$$S(\text{min}) = \begin{cases} 0.8 & \text{if Minutes} < 15 \\ 0.9 & \text{if Minutes} > 15 \text{ but } < 25 \\ 1.0 & \text{if Minutes} \geq 25. \end{cases}$$

A coefficient is applied to the players box score stats according to the number of minutes they played. In order to see how a player's TWES score varies from game to game, we can enable derivative tracking. The equation for this is d/dt (twes) = twes(n) - twes(n-1). The n stands for the number of the game played. It measures if a player's performance excluding scoring is getting better or worse over a period of time. If the change is positive then the player is improving. To recap, twes is so important because unlike other advanced stats such as defensive rating, twes is

not team dependent so it encompasses a singular player's two-way impact and it combines multiple hustle categories.

Offensive Effectiveness Score:
The Offensive Effectiveness Score (OES) is the advanced metric I created designed to quantify how impactful a player is on the offensive side of the court. In youth basketball, scoring volume can sometimes be misleading without context—players may take a high number of low-efficiency shots or accumulate stats that don't necessarily translate to team success. OES aims to solve this problem by rewarding efficient scoring, smart playmaking, and offensive reliability, while penalizing low-impact or inefficient offensive performances. The metric combines traditional box-score stats with an advanced efficiency modifier that adjusts for field goal effectiveness, usage, and playing time.

The full OES equation is as follows:
OES = (0.6 * PTS + 0.8 * AST + 0.8 * 3PM + 0.8 * FTM - 1.0 * TO) * SBEM

The first parenthesis represents the box score component—a weighted combination of core offensive statistics. Points (PTS) are weighted at 0.6 to reflect their central role, but are not overemphasized to avoid inflating the scores of inefficient high-volume shooters. Assists (AST), three-point makes (3PM), and free throw makes (FTM) are each multiplied by 0.8 to reflect their high impact on offensive flow and spacing. Turnovers (TO) are subtracted at full value (1.0) as they directly hinder offensive efficiency and often lead to opponent fastbreaks.

The second component of the formula is the Sigmoid-Based Efficiency Modifier (SBEM). This is a scaling factor between 0 and 1 that adjusts the offensive output based on a player's shooting efficiency relative to the league or team average. The formula for SBEM is:
SBEM = 1 / (1 + e^(-k(fg% - tfg%)))

Where:

fg% is the player's effective field goal percentage (eFG%)

tfg% is the team field goal percentage (set around 41.9% based on team average)

k is a steepness parameter (set to 5) controlling how sensitive the modifier is to efficiency deviations

The sigmoid function allows for a smooth and non-linear adjustment to the player's effectiveness based on efficiency. Players who shoot efficiently are rewarded with scores closer to 1, while

inefficient shooters are penalized with lower multipliers. Importantly, players who attempt fewer than four shots in a game are not assigned an SBEM multiplier—this prevents statistical noise from disproportionately affecting the scores of low-usage players. A good rule of thumb to tell if a player is efficient or not is if the players box score total multiplied by the Sigmoid Based Efficiency Modifier is more than half of the players box score total then that means that the player was efficient. However, if a player shot the ball less times in a game then the Sigmoid Based Efficiency modifier was not multiplied to the box score totals because it could lead to very skewed results.

In addition to this, OES accounts for playing time by implicitly incorporating impact through stat accumulation. Players who play more minutes generally accumulate more stats, but they also face a higher burden to perform efficiently. Because of this, OES rewards players who can produce volume and efficiency over extended minutes.

To provide a more detailed view of a player's offensive contribution, OES is often reported in two parts:

Box Score Number (Part 1): the raw weighted sum before efficiency adjustment

OES (Part 2): the final adjusted score after applying the SBEM

This split allows coaches, analysts, and players to understand not just how much a player contributed, but how efficiently they did so.

OES is particularly useful in youth basketball where traditional metrics like points per game can be misleading and where efficiency often matters more than raw volume. It gives coaches a more nuanced view of offensive value and can be used to identify players who score smart, make others better, and minimize mistakes. By combining traditional stats with a mathematically sound efficiency scaling mechanism, OES provides a robust and context-aware view of offensive performance.

Sampling Size: After the first game, the team had 6 games left in the season(one team forfeited so the Tigers got an automatic win). In order to use the advanced mathematical equations to the teams benefit, I decided to split the games in half and take the first 3 games to track team and player stats and plug those numbers into the equations. After the three games I went to Coach Dave and explained to him the following: where the team was doing good, where the team was doing bad, which players were best in what roles, which players he should play more, which players he should play less, and other miscellaneous trends we caught along the way.

Game 1

The first 3 quarters were good. They did well on offense but it seemed like a fluke because they were uncharacteristically efficient on their 3s, but that died down in the 4th which is why they got blown out. Still, their offensive system lacked cohesion as it relied on isolation plays and catch-and-shoot 3s. There was extremely minimal driving and kicking and they didn't really get a consistent strategy going. On the defensive end, they had to resort to a 2-3 man because their opponents were much more athletic than them and they couldn't take them in 1-on-1 matchups. Since they were in a 2-3, that resulted in everyone on the team getting fewer steals and blocks because the objective of a 2-3 is for the offense to shoot contested shots instead of trying to play aggressively. They played good defense in the 2-3 because they were able to have more help, especially against mismatches, but they were only still in the game because of their momentum on offense. They had a few players who were very hot, but once the 4th quarter started everyone on offense cooled down and they started shooting bad shots hoping they'd go in. No strategy, just brute force, and it didn't work. Their defense started to break down because they couldn't guard the perimeter after resorting to the 2-3, so their opponents gained immense momentum and shot up to lead the game and eventually win by 15. I think if they went into the game with a consistent offensive strategy, passing the ball more and actually playing as a team and looking for the open man, they could've stayed with them for all 4 quarters. In addition, if they played a man defense and used strategic timeouts to ensure their starters didn't get tired, I think they could've held them to significantly fewer points than 70, which is a lot for a 40-minute game.

Tagalog Tigers game #1 52-70 Loss against 3-5 team TWES Scores

Player 1 #: 10.7; 2.18

Player 2 #: 5.2; 0.99

Player 3 #: 8.3; 1.43

Player 4 #: 11.2; 2.44

Player 5 #: 8; 1.37

Player 6: 4.77; .95

Player 7: 0.88; 0.69

Player 8: 0.08; 0.66

Player 9: -1.52; 0.59

Player 10: N/A

Player 11: N/A

Team average TWES Score: 5.29

Tagalog Tigers game #1 loss 52-67 against 3-5 team OES Scores

Player 1#: 1.2; N/A

Player 2#: 15.9; 6.19

Player 3#: 2.7; 0.38

Player 4#: 16; 6.81

Player 5#: 7.7; 4.7

Player 6: 3.8; N/A

Player 7: 0; N/A

Player 8: 1.7; 0.527

Player 9: -1; N/A

Player 10: N/A

Player 11: N/A

Game 2

This game was very close in the first three quarters. The team was playing a 2-3 zone defense during this time and after the third quarter they were up 40-35. During the fourth quarter the team decided to play man defense but, because they were not accustomed to it after a few quick scores by the other team, they later switched back to the 2-3 zone defense. When they went back to the zone the opposing team took the game away. In the fourth quarter alone the Tigers allowed 32 points while they scored 17. Their lack of intensity and pressure on defense caused them to lose the game which was a result of playing the 2-3 zone. Overall, player 11 played phenomenal and he was very efficient yet he was not relied upon as much as he should have been. This game was a great learning experience for the team since it proved to them that they have to finish every game strong. This was player 11's first game on the team and he showed out. He played really well and it looked like he was the best player on the team as he was scoring plenty while doing it efficiently. Players 2 and 4 were quite ball dominant this game as well but they were not efficient with their shots. To add to that, Player 3 and 8 started the game but after a rough beginning for both of them the coach subbed them out and gave them limited opportunities to prove themselves. That is, they didn't get many scoring opportunities and they didn't play many minutes after the first quarter. All of the bench players' play was quite negligible this game as they combined for 4 of the teams 57 points and nobody from the bench had more than 2 rebounds, assists, blocks, or steals. Usually player 6 does a little for the team but he was not here for this game.

Tagalog Tigers game #2 loss 57-67 against 4-3-1 team TWES Scores

Player 1: N/A

Player 2 #: 4.6; 0.98

Player 3 #: 1.68; 0.76

Player 4 #: 7.2; 1.31

Player 5: N/A

Player 6: N/A

Player 7: 1.8; 0.77

Player 8 #: 1.12; 0.73

Player 9: 0.32; 0.69

Player 10: 0.48; 0.70

Player 11 #: 21.3; 3.89

Average TWES Score: 4.8

Tagalog Tigers game #2 loss 57-67 against 4-3-1 team OES Scores

Player 1: N/A

Player 2 #: 6.3; 1.52

Player 3 #: -0.2; -0.02

Player 4 #: 11.6; 5.66

Player 5: N/A

Player 6: N/A

Player 7: 1.8; 1.41

Player 8 #: -1; N/A

Player 9: -0.2; N/A

Player 10: 0.8; N/A

Player 11 #: 17.8; 14.68

Game 3

Although they had not won a game, the tagalog tigers fought hard in this game. The opposing team(make a swish), who was undefeated at this point in the season, had plenty of varsity-level players. This resulted in many possible mismatches if Coach Dave decided to play man-to-man defense. In order to avoid this risk, Coach chose to play 2-3 defense once again. As I've stated in past game summaries, the purpose of a 2-3 defense is to play as a more calm and composed defense that forces teams to shoot more three point shots, decrease the amount of dribbling they do, and force them to move the ball effectively in order to score. This results in the defense getting less blocks and steals. In other words, Tagalog was not hustling as much. This can be seen in the team mean TWES score: 3.3. On offense, the tigers were incredible, the game plan flowed through player 4 and 11. Player 4 made plenty of threes very efficiently and player 11 was driving to the basket whenever he wanted resulting in either a score or a foul and a pair of free throws. Player 1 and 5 both did a great job of passing the ball and making the right play. Once again, the bench's impact on the game was pretty negligible. The game was very close through the entirety of it but make a swish was taking advantage of the 2-3 defense put in front of them as they kept shooting and making their three pointers which kept them ahead by just a little bit the entire game. Offensively Tagalog did great. They were efficient, they had great ball movement, and they limited their turnovers. On defense, they struggled in the same areas as before. They didn't hustle much which was a result of the 2-3 defense and that gave the other team the chance to shoot the lights out from three which they did.

Tagalog Tigers game #3 loss 72-79 against 8-0 team TWES Scores

Player 1#: 4; 1.075

Player 2 : N/A

Player 3 : N/A

Player 4 #: 3.5; 1.02

Player 5#: 9.8; 2.86

Player 6#: 1.35; 0.84

Player 7: 0.32; 0.77

Player 8 : 1.04; 0.81

Player 9: N/A;

Player 10: 0; 0.75

Player 11# : 6.4; 1.44

Average TWES score: 3.3

Tagalog Tigers game #3 loss 72-79 against 8-0 team OES Scores

Player 1 #: 9.8; N/A

Player 2: N/A

Player 3: N/A

Player 4 #: 28.5; 20.84

Player 5 #: 8.9; 5.43

Player 6 #: 1.6; N/A

Player 7: 1.8; N/A

Player 8: 0.8; N/A

Player 9: N/A

Player 10: 0.8; N/A

Player 11 #: 14.2; 7.28

Modyx Suggestions To Coach Dave

What the team was doing good: Every game there was an evident #1 scoring option on offense which was evident through the OES. The #1 scoring option wasn't the same every game but whoever the #1 option happened to be efficient that game.

What the team was doing badly: The zone defense was clearly not working which can be seen by the opposing team's average point total and the team's average TWES score (71 and 4.46, respectively). Outside of the number 1 option others were either not efficient on offense or they didn't produce enough on offense at all. In addition, Tagalog was always losing the game in the fourth quarter. What I mean by that is that the game would be close up until the 4th quarter where the opposing team would pull away. My hypothesis of this was that opposing teams began to get accustomed to the zone and they started running the right plays and sets to beat a zone defense.

Which players were best in what roles: The only players who were best in their current roles were Players 4, 5, and 11. Player 4 was relied upon plenty and he was, for the most part, efficient. To add to that, he was effective as a role player in the games where he wasn't the #1 scoring option. This can be shown by his TWES score of 7.3 in the first three games which was the fourth highest on the team. Player 5 is a big man whose impact on the game isn't shown all on the offensive side. Although he had an OES of 8.3 through the first three games he also had a TWES of 8.9 through the first three games. Both numbers are great in their respective categories. Player 11 was insanely impactful on both the offensive and defensive side of the ball. He had the highest TWES of 13.85 through the first three games and an OES of 14.65; 10.98 through the first three games. However his role needs to be altered a slight amount.

Which players Coach should play more: Looking at the numbers, the only people who made a true impact on offense were players 1-5 and player 11. Nobody from player 6-10 had an average OES of more than 2.7 at this time. In addition, according to TWES, players 1-5 and player 11 were the most impactful excluding scoring. However, playing every single game with 6 players is very difficult because of the amount of stamina needed from all six players. As a result, the Coach should play all of the starters more minutes while also giving players six, seven, and eight more minutes in order to give the players mentioned before some rest time.

Which players he should play less: To be honest, Coach Dave could play any of the players 6-10 more minutes. It just doesn't matter who he plays because all of their impacts on the game are similar according to TWES and OES. However, players 6-8 have barely higher numbers in both stats than 9 and 10 so it would be safer to play them more.

Which players coach should utilize differently: Player 1's scores were quite odd up to this point, he had a very solid TWES score of 7.35 but he had a slightly low OES for a repeated starter of 5.5. This is kind of understandable however because the SBEM was not multiplied to

his score in any of the first three games which meant he was shooting the ball a very little amount. After taking that into account, his OES of 5.5 doesn't look that bad. Still, I recommended to Coach Dave that he should get some plays drawn up for him so that he can get more shots but not a ton so that it messes with the rest of his impact on offense. Besides player 1, player 3 also looked like he needed to be utilized differently. He was struggling offensively with an OES of 1.25; 0.18, however Coach kept playing him a decent amount of minutes every game which signaled to me that Coach had faith in him. Because of this, I suggested that player 3's minutes do not change but instead he needs to play harder on defense and on offense he needs to look to pass more yet if he has an open shot he should still shoot it. Lastly, player 11 seemed to be the most dominant player on the court as he had the highest TWES score and second highest OES score. However, player 4, who had the highest OES score, was going on vacation for the next two weeks which meant he wasn't going to be there for the next two games. This meant teams would create game plans around stopping him. I suggested the player 11 be a decoy on the plays that Coach Dave draws up so that teams pay less attention to the other players, specifically players 1,2,3, and 5.

Plan of action for the rest of the season:

- Stop playing 2-3; play man defense
- Utilize player 11 as a decoy; get the ball to players 1,2,3, and 5
- Focus on improving ball movement; would result in many players receiving a high OES score
- Emphasize playing aggressive on defense instead of calm and reserved.
- Play 3 of the 5 players 6-10 a little more to save the stamina of players 1-5 and 11

Game 4

Using the advice given from the modyx team, coach dave was able to coach the team to their first official win of the season. Players 8 & 9 weren't present so it made coach's job on what 3 of the 5 players 6-10 to play very easy. In addition, the coach turned to a man press defense from the old zone defense which requires guarding the other team's full court which is very tiring so players 6,7, and 10 played a decent amount off the bench. On offense, coach didn't call many plays and instead let the team play in transition which just means that instead of scheming with plays to score on the other team, they would just try to beat the other team to the basket— kind of like a race. Whoever got the rebound on tagalog would try to dribble coast-to-coast and score. These adjustments were causing a little trouble in the first half as Tagalog was only up 23-18 but once the team got accustomed to this new style of play they ran away with the game. The team improved on defense as a whole which can be seen in the team twes score of 6.99.

Tagalog Tigers game #4 win 49-34 against 2-5-1 team

Player 1: 6.4; 0.94

Player 2 : 5.1; 0.84

Player 3 : 5.8; 0.89

Player 4 : N/A

Player 5: N/A

Player 6: 9.4; 1.32

Player 7: 6.48; 0.95

Player 8 : N/A

Player 9: N/A

Player 10: 5.76; 0.89

Player 11 : 10; 1.43

Team average TWES: 6.99

Tagalog Tigers game #4 Win 49-34 against 2-5-1 team OES Scores

Player 1 #: 5.8; 3.54

Player 2 #: 8; 5.77

Player 3 #: 12.3; 8.22

Player 4: N/A

Player 5: N/A

Player 6 #: 1.6; N/A

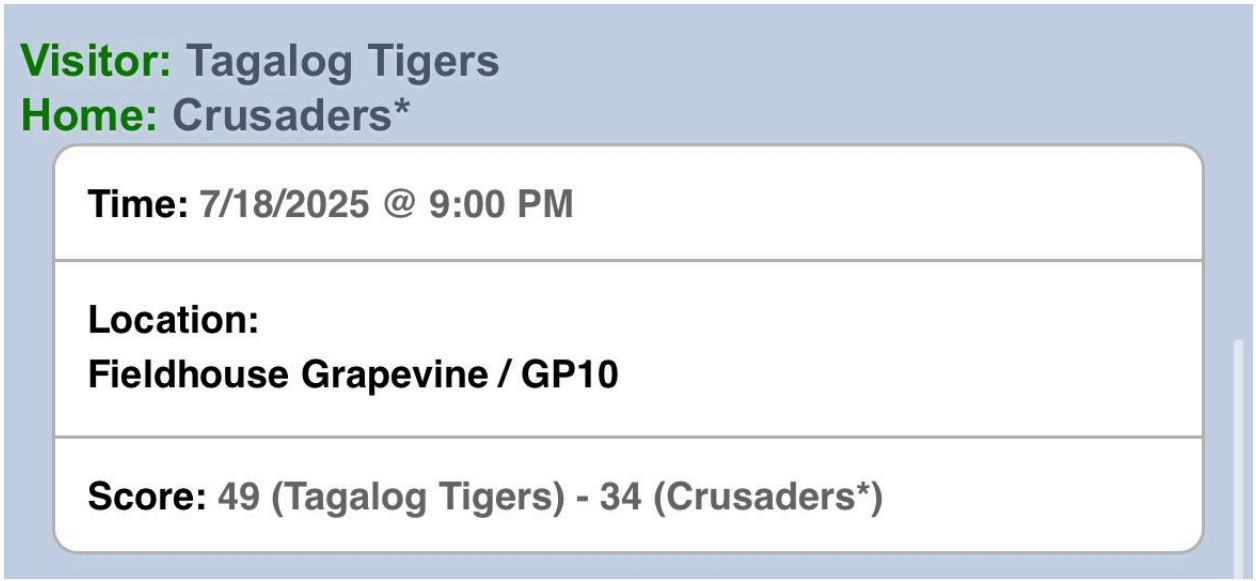
Player 7: 0.6; N/A

Player 8: N/A

Player 9: N/A

Player 10: -0.2; -0.02

Player 11 #: 11.5; 7.022



Game 5

Tagalog's opponent this game was quite interesting. They had one elite player but the rest were only average to above-average. In this game, Tagalog decided not to play a press defense but they still played man instead of zone. Defensively they did a great job in man defense once again with an average twes score of 6.99. Players 1-3, 5, and 11 held most of the load on offense and defense and they were efficient on offense which can be seen in all of their twes and oes scores. As per the recommendations, Coach Dave used player 1 differently by using him as more of a scorer and less of a passer this game. To add to that, Coach also drew up some shooting plays for 3 which he delivered on. This was a solid team win on both sides of the ball that were heavily impacted by the recommendations our group made to the coach.

Tagalog Tigers game #5 win 57-45 against 5-3 team TWES Scores

Player 1 #: 8.2; 1.13

Player 2 #: 5; 0.83

Player 3 #: 5.7; 0.89

Player 4: N/A

Player 5 #: 13.2; 2.64

Player 6: 2.8; 0.7

Player 7: 3.7; 0.75

Player 8: N/A

Player 9: N/A

Player 10: N/A

Player 11 #: 10.3; 1.50

Team average TWES: 6.99

Tagalog Tigers game #5 win 57-45 against 5-3 team OES Scores

Player 1 #: 11.3; 7.55

Player 2 #: 9.4; 5.74

Player 3 #: 8; 4.12

Player 4: N/A

Player 5 #: 5.4; 2.36

Player 6: -2.2; N/A

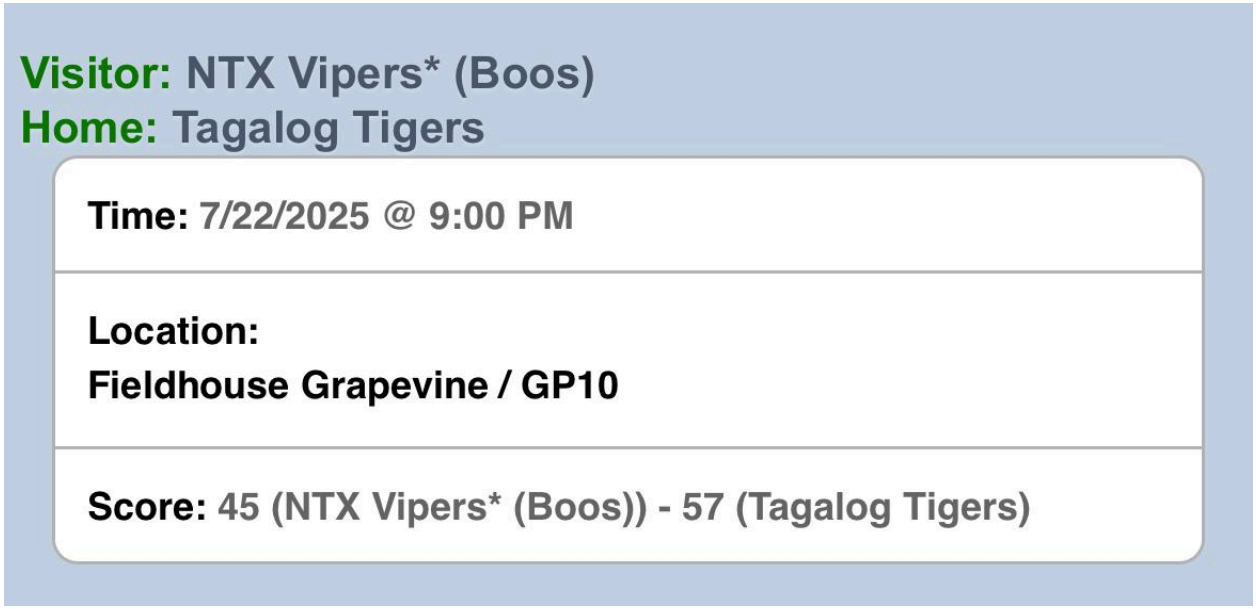
Player 7: 2.8; 1.37

Player 8: N/A

Player 9: N/A

Player 10: N/A

Player 11 #: 9.6; 5.51



Game 6

This game was very important for two reasons. First, if Tagalog won they would be in the playoffs and second, this game was against the same team that Tagalog lost 28-32 in the first game of the season. This would be a true test to see how much the team grew. To be honest, the game was never close. In the third game in the man defense, the Tigers played super solid defense only allowing 23 points and having an average twes score of 6.59. Because the game was a blowout, players 6-8 got to play a little more which kind of inflated the stats for them and deflated the stats for others but not by an incredible amount. On offense, the team played a brand of basketball highlighted by a great amount of togetherness. Everyone was passing the ball around, taking the right shots, and not turning the ball over. With this win Tagalog clinched a playoff spot!

Tagalog Tigers game #6 win 57-23 against 3-5 team TWES Scores

Player 1: 8; 1.16

Player 2: 3.9; 0.79

Player 3: 9.3; 1.37

Player 4: 8.9; 1.3

Player 5: 13.4; 3.14

Player 6: 4.8; 0.85

Player 7: 0.9; 0.64

Player 8: 3.5; 0.77

Player 9: N/A

Player 10: N/A

Player 11: N/A

Team average TWES: 6.59

Tagalog Tigers game #6 win 57-23 against 3-5 team OES Scores

Player 1: 8.9; N/A

Player 2: 8.5; 4.14

Player 3: 8.4; 3.37

Player 4: 8.2; 3.79

Player 5: 6.4; 4.97

Player 6: 2.6; N/A

Player 7: 4.7; 2.87

Player 8: 3.6; 2.19

Player 9: N/A

Player 10: N/A

Player 11: N/A

The organization that runs the league reports games with a maximum point differential of 15 so if one team wins by more than 15 points it will only be counted as a 15 point win in the schedule.

Playoffs/ Conclusion

The playoffs were a 4-team format with where the 1-seed played the 4-seed and the 2-seed played the 3-seed. Tagalog was a two seed. We did not document this game statistically because the team was doing good with our first set of suggestions but we still did watch the game. Long story short, Tagalog pulled away in the fourth quarter to win the semi-final game 50-30. On the other side of the bracket, the 4 seed upset the 1 seed in a high octane offensive game winning 83-79. This team was also the group that Tagalog played in game two of the analysis. Using our suggestions, playing man defense, giving the ball to players 1,4, and 5, drawing up plays to get #2 open on for long-range shots, and more, Tagalog came out on top winning 54-53! They started off 0-4 but after we gave out analysis of the team using advanced mathematics their season took a complete turn for the better. I just want to say thank you to Coach Dave for agreeing to let modyx follow his team throughout the season, he did a great job of cooperating with us and it worked out in the end. The Tagalog Tigers season is just another case of how mathematics can be used in the world to provide real results!