

Analysis and Evaluation

Introduction:

Athletics is an international sport and is the sport of competing in track and field events, including running races and various competitions in jumping and throwing. I have been participating in athletics since I was 8 years old but I have been training at an elite level for 3 years. I mainly specialise in 800 metres' and in winter I partake in national cross countries. In 2018 I was the fastest Under 15 girl in the United Kingdom and won English School track and field championships one of the most prestigious athletic events in the country. I have competed for the school, borough and the county on multiple occasions. My fitness strength in athletics is muscular endurance and my skill strength in athletics is my reaction time. I believe my fitness weakness is speed and my skill weakness is my stride length.

Part 1 Analysis:

Strength fitness component:

When competing in 800m I believe my fitness is muscular endurance. Muscular endurance is the ability for a muscle or group of muscles to sustain repeated contractions against a resistance for an extended period of time. It is one of the components of muscular fitness, along with muscular strength and power. An 800m runner requires you to run fast and an extended amount of repetitive movements and with each step, your large lower body muscles including your hamstrings, quadriceps and gluteus Maximus must contract against the forces of gravity and your own body weight. 800 is the fastest endurance based sport in athletics so needs muscular endurance, as an 800m runner I require a large amount of leg power. Leg power is important to promote the high maximum speed required for the event; and general strength in the hamstrings, calf, abdominals and quadriceps is essential to help me run at the highest possible level and as fast as I can. I believe that muscular endurance is my strength because in training, and in races I have been able to run the shorter distances (any distance from 100-800) at a fast pace and not slowing down at any time because of my lack of muscular endurance and instead speeding up. I also know that muscular endurance is my strength because in training outside of school and in class I took part in fitness testing for muscular endurance one of them being the Kosmin test a test which I used to predict an athletes 800m time. The Kosmin test is a fitness test that is used by elite runners all over the world with 95% accuracy and is used to judge how well training is going and if you are along the track to your target at the end of the season. The test requires the me to one for one minute around an 800m track aiming to cover the most distance, once the whistle blows I stop where I finished, my coach then records the distance I then have a three-minute recovery and then do another one-minute run starting from where I finished the last effort, and then my coach will calculate the total distance I have run, my coach will then use this

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final total distance to assess my performance and predict my total time. I have previously covered 777 metres which predicts my time of 2 minutes 10 seconds and in the next race I did this was my time as seen in the picture below which is an online website that is used to predict an athlete's Kosmin test results.

Assessment

Predicted 800m time

For an estimate of your potential 800m time select your gender, enter the total distances covered and then select the 'Calculate' button.

Gender	Female ▾	Distance	777	metres	Calculate	800m Time	2	minutes	10	seconds
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Race example 1:

An example of where I have demonstrated a good level of muscular endurance, is when I won the grand prix an important race in the track season. I was racing against people 2-3 years older than me in this race as a result the race was run at a fast pace where I had to have good muscular endurance to keep up. Unlike usual completion races the grand prix is a race where people not only aim to win but to improve their personal best therefore the race demands a higher level of power stemmed from muscular endurance that I had. The race started at fast pace and as the race developed it only got faster requiring me to maintain and quicken the contractions against the forces of gravity and my own body weight. Allowing me to win the race and gain a new personal best if it wasn't for my muscular endurance I may not have been able to do as well as I did.

Race example 2:

Another example where I displayed a good level of muscular endurance is when I won the gold at the English schools track and field final 2018. Going into the race my coach had set out a race plan for me and my training partner where I would take the first 200m of the race she would take the next, then I would take the next 100m then she would take the next 100m then we would just sprint to the end. However when I started off I had misjudged the pace and I had taken a 5 metre lead earlier than planned as a result my partner was unable to keep up unknown to what was happening behind me in the race I had to take the lead. I had to change and adapt quickly to my race plan by having to maintain the pace that I was running at to avoid being overtaken in order to still win. I had planned to only sprint at the last 250m of the race therefore mainly using speed and muscular endurance however I had to take the lead in the first 200 m of the race which was not as I planned therefore a large amount of muscular endurance was required that I had not practiced in training but because I naturally have good power in my legs I was able to stay at a high speed throughout the whole race without getting too tired and speed up at the end as well. Allowing me to win but also with a 20 – 30 metre lead as well which is much more than I could've hoped for. As

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a result, it impacted my overall performance as I was having to work harder in the race and use my muscular endurance harder than I have had to use it before.

Weakness fitness component:

I believe that speed is my main weakness mainly focusing at the end of the race and not being able to kick and speed up towards the later stages of the race where I find my opponents are able to speed up which ends up costing me medals or seconds or places in the race. 800m is a speed-endurance based sport and I have the endurance side from my work in cross countries in the winter so reflecting that onto summer my speed is not always the best mainly focusing on the end of the race where I am unable to maintain or carry on that speed. The 800m is ran at both an aerobic and anaerobic threshold the beginning and end of the race the body is at an anaerobic threshold and in the middle it is an aerobic threshold due to the length of the race. As said in the introduction my skill strength is reaction time as I am very quick off the line however making sure that I don't use all my energy up when getting off the line quick maybe why I don't always have enough speed at the end of the race. 800m runners require good speed because individuals tend to sprint the last 200m of the race at top speed which is where the bulk of the race tends to happen and where the fastest individuals tend to be. I usually rely on my good muscular endurance and reaction time to get me far away from the leading pack as soon as possible to avoid the race coming down to how fast you can finish which I am not good at. An 800m runner requires a good speed background and runners need to have a good 400m,300m speed however I come from a more of a cross country background so don't have as good speed as other people tend to do. At training and at school I have taken part in the 30 metre sprint test which is a test used for national runners is the 6 x 40 metre sprint test which is where a 40 metre line is marked on the track and when the coach blows the whistle you run to the end and then rest for 30 seconds and then you go again and repeat six times timing each repetition from one end to the other. The aim of this test is to measure an athletes sprint fatigue which is mainly where I lack in a race as I believe my speed is generally good it is just in a race where I feel it is lacking. My result is average for an 800m runner which sets me behind other athletes my age and can put me at a disadvantage before the race has already started.

Race example 1:

A race where I have shown a lack of speed was in the European club championships where I represented my club who represented Great Britain I was the youngest in my race as I was racing girls who were 2-3 years older than me and had run times nearly 3-4 seconds than me which in track is quite a large amount. In my race I had a really good start as always and was in the top 3 however towards the last 200m of the race I was unable to carry on with my speed and was getting overtaken and ended up finishing the race in 5th place when really if I had good end of race speed I would have been able to maintain this and speed up and finish in the top 3. Due to the conditions of the race it was raining during our race meaning no one

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was able to run at good speed so the race they were running at was more my pace however there kick at the end of the race was better than mine which meant I was unable to keep up and perform as well as I would've wanted too.

Race example 2:

Another race where I have shown a lack of speed at the end of my race was when I ran a 400m for my club at the YDL which is a league race. I had a fast first 200m where I ran 28.5 seconds which was due to my fast reaction time but in the last 200m I was unable to maintain this speed and speed up which is what I should be able to do and then I ended up running a 30 seconds last 200 which I should've been able to speed up and finish the race quicker and if I was to drop it should've been only by .5 seconds which is not what I was able to do therefore It meant that I didn't run as well I finished in 4th place and was unable to secure the points that I needed to for the team.

Skill strength component:

When competing in the 800m I believe my skill strength is my reaction time mainly focusing on the drive phase of the race at the beginning. Reaction time is the ability to respond quickly to a stimulus and in 800m reaction time is mainly how quickly you can get off the line when the gun blows and getting into a good position. 800m is only two laps and so you have to make sure you're in a good position from the start to make sure you have a good race. The drive phase tends to be the first 100m in an 800 as you are in your lane for the first 100 metres and when you break your lane it is essential that you are in a good position to ensure a good race and due to my lack of speed and stride length I rely on my reaction time to get into a good position at the start of the race, to ensure that I have a good enough lead when I break lanes as my good muscular endurance allows me to get away from my opponents and secure a lead early on in the race without having to rely on my speed at the end of the race which is not very good, with a good reaction time I can make sure that I have an advantage over my opponents at the start of the race as I have a good driving start to outrun my opponents. I know that reaction time is my strength because in races I am able to guarantee myself a lead due to my fast reaction time I am unable to leave the start line as quick as possible and get to the starting line ahead of my opponents.

Race example 1:

A race where I have demonstrated a good level of speed is also in English schools track and field final where I ran. Due to my good reaction time I started the race off very fast, faster than my opponents did and ended up gaining a lead 150 metres into the lead which is very early in an 800m race which is due to my driving speed I was able to drive away from my opponents and create a lead and due to my good muscular endurance I was able to maintain this lead from my reaction time and win the race.

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Race example 2:

Another race where I have demonstrated a good level of speed was in the club European championships where I represented Great Britain in the 800m a 4 x 400m relay. I was one of the youngest in the competition and in the 4 x 400m race I was on third leg and my team mates came in 1st place and although I don't have the best 400m speed I have a good reaction time and I was able to drive fast away from my opponents and extend the lead that we had so that although I didn't have a good finish it didn't matter as I had good muscular endurance to maintain the lead I had and although I may have slowed down by a few seconds I wasn't overtaken and I handed over in 1st place. However if I did not have a good reaction time I would not have been able to extend the lead and most likely would have been overtaken and not been able to hand over in the best position possible which I was able to.

Skill weakness component:

I believe that when competing my main skill weakness is the size of my stride length. As a runner I need good stride length because it means I am using my body's energy efficiently and helping keep myself injury free. A stride length is the distance from the toe of one foot to the toe of your other foot as you run. As a runner I believe that I over stride meaning I extend my foot too far in front of my body in an attempt to increase my speed however it can lead to heavy wear on my muscles, sore knees and other injuries, and in the past I have suffered from shin splints, and back pains which could be a result of my over striding. Also a stride that is too long means that I have to work harder to stride further, leading to an inefficient output of energy and increased fatigue which could be why I am unable to speed up at the end of the race and I find myself tiring up towards the latter stages of the race as I am working twice as hard as other athletes due to the amount of effort I am putting into my stride length when I run. In races I find myself running out of breath quickly and falling behind in races which I believe is due to my bad stride length I don't have the energy to faster at the end of the race as I am so tired from the amount of energy I am having to put in. I also believe that when running around the bends in races I over stride to try and make sure I am not being overtaken and then by the time I get to the straights I am out of breath and this is what can lead to a bad race for example in the last 200m the first 100m is ran over a bend where people speed up and I over stride and the next 200m towards the end I aim to speed up but I am unable to because I am out of breath and can no longer keep up.

Race example 1:

A race where I have shown a bad stride length was in an open meet in Manchester this race was one of the last of the season therefore people were eager to get a fast time so the race was very crowded which meant that I found myself overstriding in an attempt to keep up and speed up. However, I was too dependent on my good reaction time to earn me a good lead but due to the crowds in the race we weren't all put in an individual lane and was all together on the start line making it harder to get away so I found myself overstriding which made me fatigued and unable to keep up so when it came to the bends I was unable to

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overtake people and instead was getting overtaken which meant that people were able to stretch out in the straight parts of the track which I am unable to do with not having a good stride length and I was unable to catch up to people meaning that I got stuck behind people which lead to a bad race and not an amazing time.

Race example 2:

Another race where I have shown a bad stride length was in a open race also due to the crowds of the race I was put into a race with people that were much faster than me so found myself overstriding in an attempt to maintain the pace and I found myself at the back of the race very early on and I could not keep up and then was getting out of breath very quickly and becoming very tired in the first 200m and then the rest of the race over striding with no one around me I was getting slower as the race went on consequently leading me to a bad race.

Part two – Evaluation:

Training method:

I have chosen to improve my speed focusing at the end of the race and my stride length where I am aiming to run the perfect stride which is my biggest weakness's in order to do the best I possibly can in races. I believe that if I improve my stride length I will not become tired early on in the race leaving me with energy to speed up at the end of the race to avoid being overtaken or receiving a bad time. To improve my weaknesses I am going to do Interval training. Interval training involves periods of exercising hard, combined with periods of rest or low intensity exercise. It will help improve my speed because in my session I will involve periods where I am focusing on speeding up as the repetition goes on so that by the end of the repetition I am at a good speed but I still have worked hard prior to this and it will also help improve my stride length as I will be focusing on how I run to make sure it is the perfect stride length which insures that I am running at the fastest I possibly can. I have chosen this over Continuous training which a sustained level of exercise is completed a consistent pace without rest because I complete long road runs every day outside of training and have found that this has no benefit when coming to a race as it just is mileage. I also find continuous training very boring and doing this a lot has triggered injuries as it is always done on the road, as it is done at the same pace I am unable to work on my speed as well as I could in interval training and due to the long periods I will not be able to focus on my stride length as well as I could if I did interval training. Interval training will also be more beneficial for me because it is more varied than continuous training and in the session I will vary the speed so I can mirror race pace where I start slower then speed up as the race goes on which is the opposite to what I do I races where I start off fast and end up slowing down as the race carries on which then leads to bad performance. I can also incorporate reaction time into my into the Interval training because I am able to make sure that I speed up in the frist 100m as I would in an 800m race. The session will be ran at different speeds so at the

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end of the session I will speed up, it also allows me to work on both aerobic and anaerobic energy systems, which is what I would do in a race; where I would start off running at an anaerobic energy system as it starts at a fast pace therefore strengthening my reaction time and as the race progresses I work in an aerobic energy system and at the end when you typically sprint to the finish line you would work in an anaerobic energy system. Interval training works best for me because I am able to work with a variety of my weakness's at the same time rather than working with just one. It also helps stimulate my heart rate with a variety of paces, and help my body to tackle lactic acid production. Interval training will help develop my maximal oxygen uptake which corresponds with the speed at which my oxygen uptake is at its highest. When I increase my aerobic capacity it will increase my resistance to exercise and speed. This will help improve my stride length because I will be completing the sessions at a running track which will improve running around the bends which I need to practice doing at the same pace I run the straight parts of the track. It will also help me get my perfect stride length which is where I aim to keep my foot strike under my body. When I want to accelerate, I try and avoid the urge to lengthen my stride and instead quicken my overturn steps. When running my coach will be watching me to make sure that I am trying to get the perfect stride and helping me improve it and with interval training I am able to keep on repeating the activity to make sure that I am maintaining the perfect stride length.

Warm up:

My warm up is as equally important to my main session having shin splints last summer I know the importance of needing to do a good, thorough warm up. To start I will jog for 10 minutes to raise my pulse to increase oxygen to working muscles which will help prevent pulling of the muscles and will increase my body temperature ready for exercise, followed by this I will spend an additional 15 minutes stretching all the muscles that will be used in the training for e.g the hamstrings which will be used as I am doing the same repetitive structure and will be in use throughout the whole session. The warm up will also allow me to work towards full-intensity exercise. Furthermore, a warm up will also allow me to be focused and psychologically prepared for the training ahead, being an elite athlete I have a tough session ahead and not only will it be tough on the legs but mentally it will be tough and I have to be physically preparing for the training at the same time I can do this by using techniques to control my arousal for example deep breathing because as the reps get harder deep breathing will help calm me down and get me focused for the training.

Main training:

Session: each lap increase the pace

5 laps – 82 seconds 1st lap, 80 seconds 2nd lap, 78 second 3rd lap, 77 seconds 4th lap, 76 second 5th lap. Total distance 2km

2 and a half minutes

4 laps – 80 seconds 1st lap, 78 second 2nd lap, 76 second 3rd lap, 74 seconds 4th lap. Total distance 1.6km

2 and a half minutes

3 laps – 76 seconds 1st lap, 74 seconds 2nd lap, 72 seconds 3rd lap. Total distance 1.2km

2 and a half minutes

2 laps – 72 seconds 1st lap, 70 seconds 2nd lap. Total distance 800m

2 and a half minutes

1 lap – AS FAST AS MY BODY CAN TAKE ME! Total distance 400m

TOTAL DISTANCE – 7.2 KM

During the session I will be working both aerobic and anaerobic. I will be working aerobic in the earlier parts of the session where I am running slightly slower therefore needing to work at 60-80% of my maximum heart rate and this will be measured using my Garmin Forerunner 235. I will begin running anaerobically when I take in less oxygen as I will be changing pace and producing more lactic acid therefore running at 80-100% of my maximum heart rate which means I will be in Oxygen debt. Oxygen debt is the amount of oxygen consumed during recovery above that which would normally be consumed during rest and as my rest is only short more oxygen debt will be made hence why the shorter parts of the session I will mainly be working at an anaerobic training zone. Speeding up each lap makes my legs able adapt to change of pace which is what happens in a race, this will improve my speed because I have to up the pace which in races I am not very good at being able to do I will be running for a long period of time at a fast pace I am having to change pace throughout the session which is not something I am able to do in races. The rest is only two and a half minutes therefore lactic acid will build up, making it harder to run again each time meaning that it will be harder to speed up while being tired which is usually what happened in a race and by practicing it in training makes it easier to do so in a race. The session will also help improve my stride length because in the bends is where I will use it to start speeding up and stretching out on the straights going around the track multiple times will help me practice doing this multiple times in one repetition so for example on the 5 laps rep on the 3rd lap if I failed to reach my target time on the next one I practice speeding up around the bends and seeing if I have reached the next agreed target time for the next lap. Which should help improve my stride length as I am practicing different sizes of the strides

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at different points of the track. Also by increasing my stride length will also help me run faster and by practicing it in training helps my body familiarise itself with how it feels so that I can repeat it in races. My session is ran over long distances which means that I start off slow then slowly increase the pace and speed up which is not something that I am able to do in races and it being over a longer distance means that I am more tired and having to practice running on tired legs rather than doing shorter repetitions with longer rest, but with the rest being only two minutes it gives me less time to recover which will make me work harder as I am having to deal with lactic acid and also having to try and run fast at the same time because I have target times to aim for rather than if I didn't have time to aim for I would just be running slowly and this would not help improve my speed and my stride length therefore this training session would be useless and not help me improve at all. Usually in sessions I would have longer rest giving me more time to recover hence why I don't always perform as well. To make sure that I am reaching my target times I will wear my Garmin forerunner 235 that I can set to beep every 400m at the target time I have set myself it will also tell me my heart beat so that I can make sure that I am working in the correct energy zone which will be aerobic, because I am working on my cardiovascular endurance.

Cool down:

After the session it is vital that I cool down. As an athlete I am quite likely to skip the warm down and head off straight home due to me being too tired from the session, however this has lead me to getting injured and end up missing weeks of training altogether when it would just be easier to spend 30 minutes of cooling down in comparison to weeks missing out due to skipping the cool down. Similar to the warm up I would jog for 15 minutes to help the body recover from the effects of this intensive exercise and help the body to remove lactic acid and carbon dioxide. Followed by this I would do 15 minutes of stretching to prevent the effects of delayed onset of muscle soreness (DOMS.) I will also refuel and consume more carbohydrates and proteins as it provides the body with complex carbohydrates which will restore your energy levels, also restores blood glucose levels. Proteins are essential as proteins repair muscles and also strengthen it. I will also carry a banana with me to refuel and replace my body's level of glycogen, which would help rebuild any damaged muscles it is also filled with lots of potassium which your body loses when you complete intensive exercises.

Sport:

S- specify training needs to be specific to the athlete/person e.g a cyclist may do more leg weights than upper body weights. My training is specific because I am focusing on my lack of speed towards the end of the race and my stride length and how I need to improve it. Each rep I do something to improve my weaknesses, for e.g changing the pace lap will help me practice speeding up towards the end of the rep as I would do in a race.

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PO – Progressive overload Training must get harder each session otherwise your fitness levels will plateau (stay the same) instead of increase. Each rep the target times for the laps get quicker and are not slowing down so that my fitness levels don't plateau. Mainly my stride length and my speed by the laps getting harder I am making sure that I don't slow down and maintain the improvements that I have made within the session.

R – Reversibility if an individuals decrease training level, than fitness and performance are likely to drop. Muscle strength and speed can drop quite quickly if training is stopped altogether. My rest in the session is short to prevent me from recovering and decrease the level in which I am training at. It also allows me to make sure that I am working as hard as possible and by the rest being short I am making sure that I am mirroring how I would feel in a race in terms of fatigue levels rather than have long rests in between each rep as in a race you wouldn't have time to recover.

T – Tedium refers to boredom. Training should be altered and varied to prevent an individual from suffering this. My training is altered and varied to prevent me getting bored as I change the pace on each rep giving me something to work for. I am also staying alert and while focusing on my stride length rather than just running for the sake I am staying focused an alert.

Theoretical link:

I have chosen to speak about is arousal levels and motivation as an athlete this is something that I struggle with a lot and with tough sessions like this it helps me improve it while improving my other weaknesses. Arousal is defined as a performer's 'readiness to perform', arousal can range from deep sleep to highly alert. Speed can require you to be highly alert when running because it is classified as a gross skill which is a skill that requires large muscle groups in order to work similar to what optimal arousal requires. Particularly in races as you also need to have a good sprint finish but when your opponents start sprinting you need to be able to sprint with them and due to me knowing that I have a bad sprint finish it demotivates me to even attempt to run faster, and with a bad stride length making me more fatigued I struggle to refocus as I run out of breath quite quickly, hence why I may not do as well as I feel as if I have already lost the race and there is no chance that I am going to be able to tap back into my arousal therefore I decline back to being under aroused and my performance also declines. This links to my training session, because as I mentioned previously this session requires me to be at my optimum arousal due to the target times that I have set myself they are very ambitious target times and times that with my speed at the end of races this would be seen as something impossible however I believe that with my lack of speed and stride length part of it is my lack of arousal and this session not only helps me improve my weaknesses but me being able to complete this session means that I have tapped into that focus and have delivered what I wanted to. Due to me constantly be aiming

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to focus on my stride length it requires me to be at my optimal arousal and completely focused as to change your stride length can be quite difficult without the right focus however being focused can help me improve this and once that is done I can run much faster. By doing this in the session helps me to believe that I can do this in a race when it really matters. According to the inverted U theory which will be down below I could be seen as being under aroused due to my lack of motivation and focus when it comes to areas of weakness but also because my stride length can be seen as a simplistic skill but however it requires more focus and attention then I think which is why I am more under aroused.

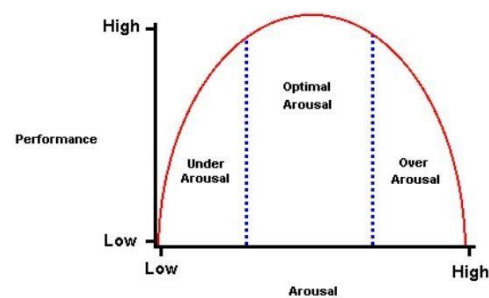


Figure 1. Inverted U Hypothesis

Note. From *Anxiety in Karate*, by L. McConnell-Brown, 1994. Copyright 2009. Retrieval

This session helps me control both, by my warm up where I complete deep breathing I am controlling my arousal and focusing on the session ahead. In the warm up I will also do 60-70m light strides so that I can practice and imagine the perfect stride length so that I can practice this in my sessions. I would use this in training because your arousal is part of your mental state which is part of your race and a bad mental state leads to a bad performance and I am someone who can lose motivation quite quickly and having a bad mental state can completely decrease my performance making me have a bad race leading to later competitions I am unable to perform well as I am unable to focus. Which can also mean if I am constantly under aroused in races and have a bad mental state I will forget what it is like to have a good mental state in races therefore practicing this in training means that I know how it feels and can reflect this in races. Furthermore, doing this in a training means that I have the belief to do this in a race as I have proved to myself that I know what I need to do to make sure that I can perform the best I possibly can.

Race evidence:

A race where I feel I have benefited from this session was in the YDL finals where I did an 800m for my club. In the race as usual I had a good reaction time giving me a good start and allowing me to get away from my opponents very early on and I was able to maintain this lead due to my good muscular endurance. In the last 200m of the race where I usually slow down I was able to extend my stride which I have not been able to do previously in races and then I started speeding up so as I came down the home straight I had a 20-30m lead which kept on developing as I increased the speed and extended my stride down the home

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straight something that I have not been successfully able to do before in a race. Part of this success I believe was also my warm up where I designated 5 minutes on top of my physical warm up to getting myself mentally focused, and at my optimal arousal which I feel benefited and paid off in the race which also gave me a confidence boost that I will be able to repeat my performance in the future and do as well. As I have shown myself that I can do it.