

# 'A' Grade Marking Sheet for Folio

## Planning

P1 – **Thorough** consideration and refinement of a research question:

- ◇ Relevance/usefulness/manageability of topic choice (e.g. PMI/SWOT)
- A<sup>+</sup> ◇ Multiple refinement steps with *reasons* each
- ◇ Preliminary research

P2 – **Thorough** planning of research processes appropriate to the research question:

- ◇ A range of processes planned, including specifics e.g. *who* to interview
- ◇ Analysis of how processes are appropriate in answering question
- A<sup>+</sup> ◇ Ethical considerations – specific steps to be taken, not just vague statements
- ◇ Timeline
- ◇ Planning for individual processes e.g. interview/survey questions

## Development

D1 – **Thorough** and **resourceful** development of the research:

- ◇ Effort evident e.g. multiple interviews
- ◇ Challenges, opportunities etc
- A<sup>+</sup> ◇ Leads recognised and followed
- ◇ Unusual sources or a wide range used or experiments done
- ◇ Processes used in variety of ways

D2 – **In-depth** analysis of information and exploration of ideas to develop the research:

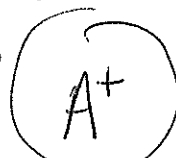
- ◇ Links to question
- A<sup>+</sup> ◇ Reflection on source's content *and* how it develops research
- ◇ Cross-referencing or use of table etc to compare or combine sources
- ◇ Use of source to identify findings, follow leads, redirect research, support other sources and recognise reliability

D3 – **Highly effective** development of knowledge and skills specific to the research question:

- ◇ Development of knowledge and skills documented
- A ◇ New knowledge used to build on or support other sources
- ◇ Change in direction/leads

D4 – **Thorough** and **informed** understanding and development of one or more capabilities:

- ◇ Comments to show deeper grasp in ways unique to project
- A<sup>-</sup> ◇ Facets of capability clearly linked as relevant to project
- ◇ Evidence of capability being developed over time throughout project
- ◇ Concrete/specific examples from project (not just generic statements)

Very well done  


# REFINING THE TOPIC - How do the different tones and rhythm of various music genres affect the mood and concentration of a subject via the impact on the brain?

## Consideration and Refinement of Topic:

The initial topic I started with was Health Services and the various different effects on the body. I chose this because it is a particular interest of mine as most of my family and relatives are involved in various health areas, and I am open to the idea of health as an occupation field, but would like to know more about the various areas and opportunities. The path in blue shown on the mind map and lotus diagram adjacent, indicates the refining process I took with my topic. I started with Health Services and gradually worked down to mental health, because of its relevance to my life and because of its particular growth in society recently. After a considerable amount of internet research on its potential, I chose Music Therapy, because I found the topic very interesting personally, as I love music, and instrument playing. I had already heard a public talk on music therapy, and knew a little about it so I decided to dig a bit deeper and really look into the scientific nitty-grittys of the way the therapy actually works. After further research I decided to do my final topic on the way it affect a person's mood and concentration.

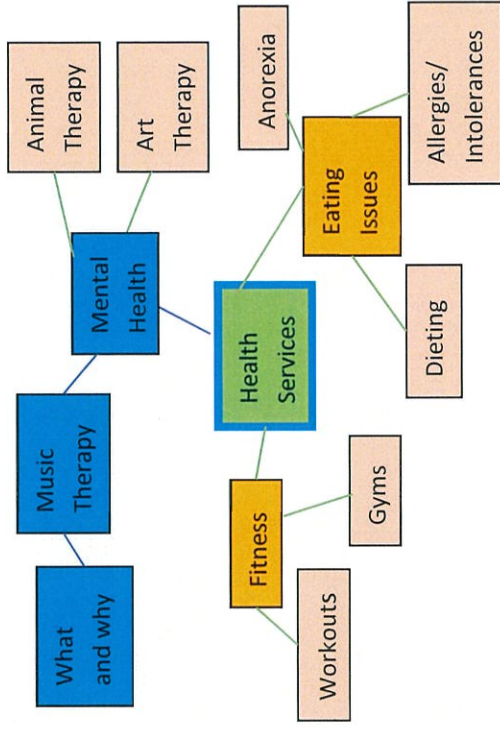
After deciding on my topic of music therapy, I decided to investigate some questions beginning at: **"To what extent does music therapy affect mood and concentration?"** This is the general topic I will be focusing on and work out where to narrow down from here to a more specific branch of this topic as it could affect both animals or humans and to focus on them all would be too broad. Being too broad, presents issues because it makes it more difficult to come to a concise conclusion. As well as this I found information on *How Music affects your Productivity* which made me realize how many different music genres there are, which all have a different effect. From here I went more in-depth and came up with **"To what extent does various types of music affect the mood and concentration of the brain?"** This is more along the field I think would be interesting, as it is something not usually

discussed, and relevant to everyone as it regards our own brains and the way they function. However the wording of 'various types of music' is quite broad and not the most sophisticated wording, making it harder to find specific sources. After doing some more internet research on the various branches of my topic, (specifically the effects of tone and rhythm), I finally came up with my final question, which is considerably more in-depth: **"How do the different tones and rhythm of various music genres affect the mood and concentration of a subject via the impact on the brain?"** This question is more refined in that it talks specifically of the different tones and rhythms rather than just music in general. Narrowing the subject down to the rhythm and tones of different genres of music makes it more scientific, making it easier to find official sources, and come to a concise conclusion. Beginning the question with 'how' instead of 'to what extent' make the question less vague, and easier to answer specifically. The way I have included the impact on the brain allows me to dig deeper into the scientific neurological effect, making the research more specific, making it easier to find a more scientific, solid base to my outcome.

**Ethical Considerations:** Throughout the process of my research, the ethics of my research must be considered. When interviewing my interviews, I will tell the interviewee what the information gained will be used for, and therefore giving them the free will of deciding whether they happy with that. Also it is very important that throughout my research I reference all sources correctly, in order to comply with copyright and plagiarism laws.

**Capabilities:** The capabilities I have chosen to work on throughout the project are Literacy and Personal and Social capabilities. Literacy was chosen because throughout the research process, I will be communicating with a range of different individuals, such as Music Therapists, I have never interacted with before, and so I must learn to use appropriate literacy and word choice appropriate to each individual to obtain optimum results. I will also be focusing on a personal level, and how I can develop my own learning and communication via music, based on the evidence I obtain throughout the research. I will also be developing my empathy and understanding for others, regarding their behaviour based on the music they listen to, and how I can help them, based on my findings.

*understanding shown well.*

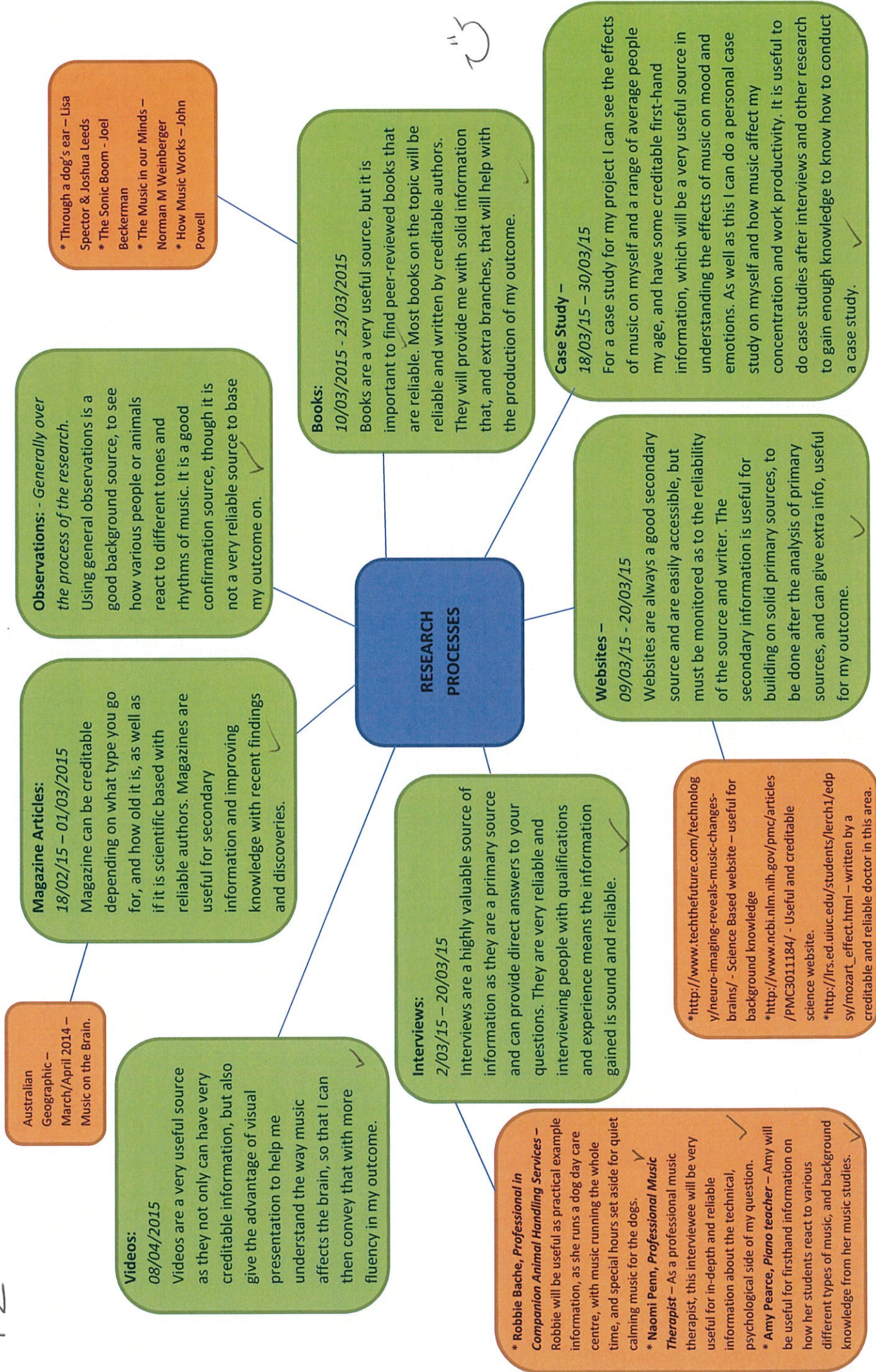


Reactions	Differences to Animals	Concentration	Colour	Their growth	Speed	Annesia	Autism (ASD)	Post-Traumatic Stress Disorder (PTSD)
Recovery	People	Their Behaviour	Water	Plants	Length of life	Dementia	Conditions	Parkinson's
Daily Life	Eating	Sleep	Consistency	Fruitfulness	Size	Stroke	Heart Disease	Down Syndrome
Cow-Milk Production	Dogs	Cats	People	Plants	Conditions	Concentration	School	Home
Zoo animals	Animals	Chickens - egg production	Animals	MUSIC	Attitude/Mood	Relaxation	Attitude/Mood	Eating
Feral Animals	Horses	Fish - office tanks	Genres	History	Relationships	Depression	Sleep	Stress
Jazz	Classical	Rock	Changes	Origins	Middle-Ages	Pets	To teachers	School-mates
Hip-Hop	Genres	Pop	Production	History	Old-records	Husband/Wife	Relationships	Friends
Contemporary	Opera	New-Age	Instruments	Performances	Peoples taste changes	Boyfriend/ Girlfriend	Public	Family

P2

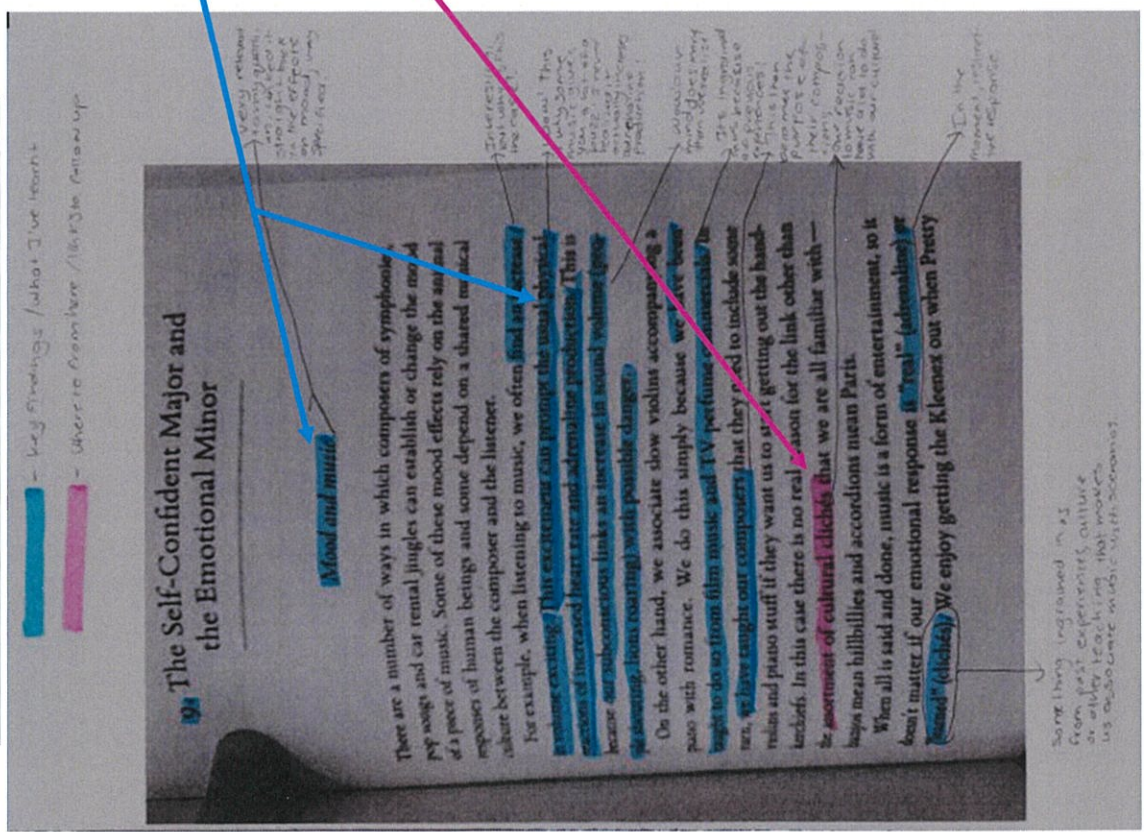
D4

# P2 RESEARCH PROCESSES - USEFULNESS AND RELIABILITY



**SAMPLE OF BOOK RESEARCH SOURCE**

**Source:** Powell, John, 2010, *How Music Works*, Particular Books, London.



**How has my knowledge developed?** D3

Through the analysis of this source I have come to realize that there are two types of emotional response to music: real (adrenaline etc...); and learned (clichés and associating experiences). In this I have come to realize an increase in the volume of a piece of music can seem exciting, as your heart rate increases, as well as an increase in adrenaline production. I learnt that this reaction is because an increase in volume makes our brain make links subconsciously with possible danger such as shouting, or lions roaring. As well as this I learnt that associating slow violins and piano with romance, is something that we have 'learned' from things like film music. This information is relevant to my question as it helps to answer the sections on how **tone** (inclusive of volume), and how that effects **mood**, by explaining **the impact on the brain**. ✓

**Where to from here:** D2/1

From here I can do some case studies on various genres and the things that an individual brings to mind and associates with the music, so I can confirm and further explore how music effects mood by the emotional connections made in the hippocampus of the brain.

**Capabilities Development:** D4

Throughout this research process so far I have developed my personal capabilities, and especially in this source I have increased my awareness of personal identity, as everyone when they are listening to music, may bring up different experiences as I will bring up experiences that relate to my own life, but that create the similar emotion as other people personal experience. I have also grown on my literacy capability, as the book section brings up different g styles and forms of writing, including the impact of films, and how music actually helps making meaning in a film, and how that relates to music we listen to latter. ✓

**Reliability / Validity of Source:** D2

This source is written by John Powell who has a master's degree in music composition from a British University. As well as this he holds a PhD in Physics at very accredited Universities. Because of these qualifications and peer review the information in this book is likely to be reliable and valid, as a result of thorough research and trustworthy and reliable knowledge. He does have limitations however as he is not a professional music therapist or psychologist. The book has been awarded as "Best book of the month" by amazon the month in which it was published. As well as this it was published in September 2012, which is fairly recent showing that the information is up-to-date and valid. The information also reflects many of the other sources I have on music and its effect on the mood. ✓

## CASE STUDY SOURCE – AMBER DODSON

**Source:** Dodson, A 2015, pers. comm., (case study), 25<sup>th</sup> March 2015.

**How has my knowledge developed?** D3

Through this source I have learnt substantial amount on the practical application of music. The results obtained from this case study support the information obtained from all my primary sources, especially the interview with Naomi Penn. I have learnt that the most effective **rhythm** for **concentration**, is a slow rhythm, with repeated phrases. I now know that music with a fast beat and **tone** with irregular pitch and loudness, changes your mood by energising and exciting your mind and giving the feeling of an adrenaline rush, as seen in points 4, 6, and 8 of the case study to the adjacent. The information gained reflects what I have found in my other sources as it shows that faster pieces of music, with a build-up in volume create an excited **mood**, and gives you a feeling of adrenaline rush.

Case Study Amber

### 1. Rhythmic Piano and percussion – Janita:

I found this **slow thoughtful, meditative, soul study**. It had melancholy bits and uplifting bits, in a mix. It was emotional, reflective. **It has a very constant, steady, but flexible pitch**. However the pitch was: **slow down tones – irregular pitch**

### 2. Deep Bass Magical Dead Thing:

I definitely could not concentrate to this music. It is unrelaxed, dark, menacing, has a **very constant bass** and a constant rhythm.

### 3. Varied Cello Pitches:

**This piece reminded me of a piece that I heard in the movie**. I could study to it, marginally suspenseful, varying tones and pitches, mixture of fast and slow, calming, and a somewhat irregular rhythm.

### 4. Fast and Beaty:

This piece was **fast, energetic, catchy, and fun**. It quite reminded me of a video game. It was unsettling and gave you a bit of an adrenaline rush.

### 5. Slow Methodical Cello:

Methodical, study to it, **slow, steady, thoughtful, and calm**.

### 6. Scottish Irregular rhythm:

Danish, adventurous, **exciting, adventurous, makes you want to move, exciting, and regular rhythm**, **slow, steady**.

### 7. Peaceful Piano:

A little bit sad, reflective, emotional, melancholy, **kind of uplifting, thoughtful, meditating, cryish, peaceful, surprising transitions**.

### 8. Fast Moving Spanish:

Spanish, El Dorado, adrenaline, suspenseful, **catchy, fast, plucky**.

### 9. Annoying Techno:

Mario, techno, **frustrating, annoying tones, frustrating, not concentrating**.

**Aryia**  
Definitely a key to studying is for music to be thought provoking and meditative.

**Aryia**  
This is why it would be good for studying – as was mentioned in the interview I conducted with Naomi Penn, the more constant and slightly slower beat is the best for studying – (50-70 bpm) which is what this piece of music was.

**Aryia**  
This pitch is considered the Blue Zone pitch (from 20Hz – 20000Hz) This pitch stimulates a people to feel balanced and well centred – perfect for studying.

**Aryia**  
This range is known as the Green Zone – low frequency music below 1500Hz. It makes the listener feel grounded – in the case it makes the listener feel 'low' and unwell.

**Aryia**  
Brings back memories – uses the Hippocampus and the Amygdala sections of the brain.

**Aryia**  
Fast rhythm (bpm) makes a person feel bouncy and motivated.

**Aryia**  
Mixing the slow – relaxing and de-stressing qualities with the Blue Zone – full range frequencies – leaving you feeling well-balanced and well-centred. The perfect option for studying!

**Aryia**  
Must be fast rhythm and bpm. (Beats per minute).

**Aryia**  
High pitched (Red Zone) creates in the listener a feeling of being energized.

**Aryia**  
De-stress and relax

**Aryia**  
**Subliminal** (Orange Zone) make the listener feel focused and stimulates speech and language ability – need to look into this further.

**Aryia**  
Fast – energetic and motivating – not concentrating though.  
Repetitive sticks in your memory and make it catchy? What exactly does repetition do?

**Aryia**  
Irregular bass, and techno sound noises – is this classified as actual music or just sounds? Something to look into!

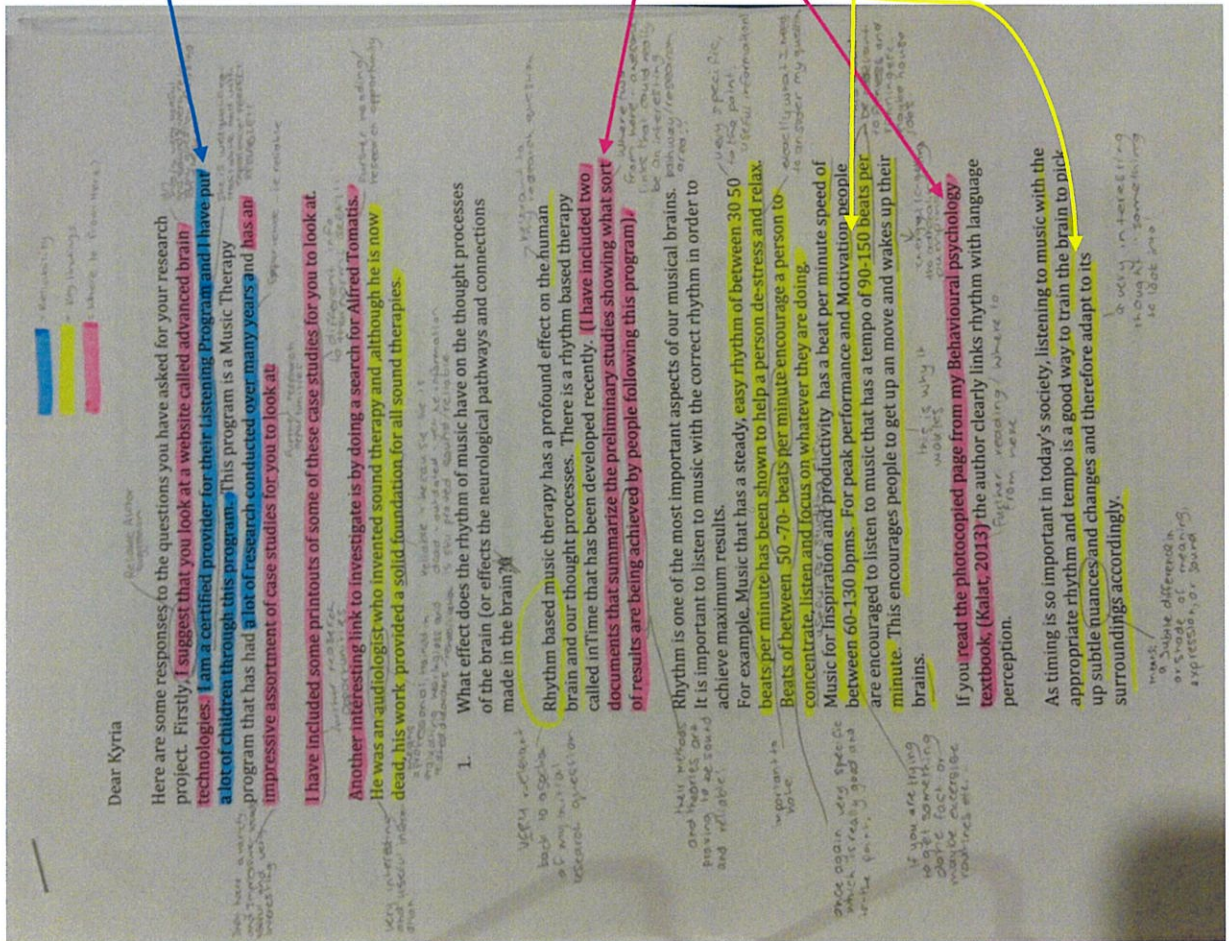
**Limitations:** D2

- The answers she gave may not be entirely accurate, only from the extent of her knowledge of music.
- As this is source is only based on one individual it could be considered bias, as each individuals reaction may differ from one another. – To overcome this limitation I have conducted four other case studies on individuals of the same age and gender, including myself, and the results obtained coincide with each other.
- I couldn't accurately interview her, as I am not professionally trained to do so.

**Where to from here:** D2/1

This source has given my quite a few answers to my questions, however it has also aroused some more in-depth questions in my mind such as: What exactly is classified as music – where is the line between sounds and music? And why does mid-range pitch supposedly stimulate speech and language ability? To follow these questions up I will look into some books or magazines, to understand the sections of the brain mid-range pitch affects, and hopefully this will answer my questions.

## SAMPLE OF AN INTERVIEW WITH NAOMI PENN:



**Source:** Penn, N, 2015, pers.comm., letter interview. 27<sup>th</sup> March 2015.

**Reliability / Validity of Source:** D2

The author of this source is Naomi Penn. She is a credited Music Therapist working as a certified Listening Program provider, with a substantial amount of experience in her work. The company she is working for has studied Music Therapy and conducted case studies for many years now, therefore the information she provides will be creditable, and reliable, as well as current up-to-date information. ✓

**Where to from here:** D1

Now that I have this information, I need to follow up the links that Naomi has provided me with, to get a broader understanding, and some real life examples of what she has explained (case studies).

**What I learn from this interview:** D3

I have learnt a considerable amount in this source. The function and effect that certain types of music have on you is all to do with how many beats per minute. The more beats – the more motivational and effective for peak performance. The less beats – the more de-stressing and relaxing. I have learnt an extensive amount about the actual science behind the connections made in the brain, and which parts of the brain do what in music processing. ✓

This information is very relevant to my question, as it specifically delves into the music's **impact on the brain**, and addresses the sections of my question regarding **tone** and **rhythm**, and the **various music genres** that coincide with them. The information gained here gives a primary basis for the information seen in my preliminary research, which indicated a variety of genres had various effect, which is shown in this primary source, and the way it explains how the rhythms (various genres have specific rhythm ranges) have the effect of changing mood and concentration – and how a slow rhythm is relaxing compared to a faster rhythm (higher rate of bpm). ✓

**Capability Development:** D4

I have developed my Literary capability substantially through my interaction with Naomi Penn, as she is a Professional Music Therapist, and therefore the questions I formed from her interview had to be sophisticated and using the appropriate language and jargon for her occupation. This improved my literacy communication with people in a variety of contexts. I have also improved my personal development as I have learnt substantially about myself and the sections of my brain and how they function, as well as the impact of various music genres on this. This can help me with the selections of music that I make, and how they will impact my work efficiency and social awareness. ✓

# INTERNET SOURCE SAMPLE - ANALYSIS

Source: Stanford University Medical Center, 2007,  
<http://www.sciencedaily.com/releases/2007/08/070801122226.htm>, Accessed 17<sup>th</sup> March

Science News  
 from research organizations

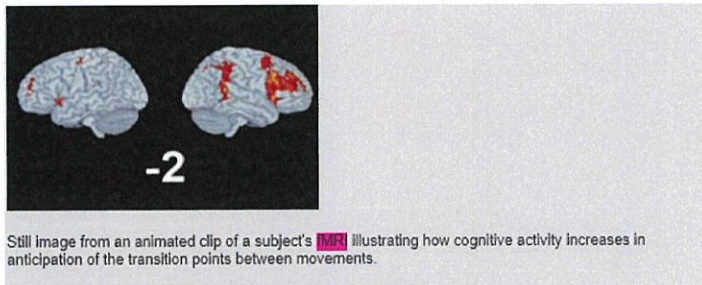
## Music Moves Brain To Pay Attention, Study Finds

Date: August 5, 2007

Source: Stanford University Medical Center

Summary:  
 Using brain images of people listening to short symphonies by an obscure 18th-century composer, a research team has gained valuable insight into how the brain sorts out the chaotic world around it.

Share:  
 169 20 5 8  
 Total shares: 202



Still image from an animated clip of a subject's fMRI illustrating how cognitive activity increases in anticipation of the transition points between movements.

Credit: Image courtesy of Stanford University Medical Center

Using brain images of people listening to short symphonies by an obscure 18th-century composer, a research team from the Stanford University School of Medicine has gained valuable insight into how the brain sorts out the chaotic world around it.

The research team showed that music engages the areas of the brain involved with paying attention, making predictions and updating the event in memory. Peak brain activity occurred during a short period of silence between musical movements - when seemingly nothing was happening.

Beyond understanding the process of listening to music, their work has far-reaching implications for how human brains sort out events in general.

The researchers caught glimpses of the brain in action using functional magnetic resonance imaging, or fMRI, which gives a dynamic image showing which parts of the brain are working during a given activity. The goal of the study was to look at how the brain sorts out events, but the research also revealed that musical techniques used by composers 200 years ago help the brain organize incoming information.

"In a concert setting, for example, different individuals listen to a piece of music with wandering attention, but at the transition point between movements, their attention is arrested," said the paper's senior author Vinod Menon, PhD, associate professor of psychiatry and behavioral sciences and of neurosciences.

"I'm not sure if the baroque composers would have thought of it in this way, but certainly from a modern neuroscience perspective, our study shows that this is a moment when individual brains respond in a tightly synchronized manner," Menon said.

- Kyrria  
The more Research organizations involved, the more reliable.
- Kyrria  
Relevant to my question - impact on the brain, concentration (pay attention)
- Kyrria  
Not too old - relatively new - up-to date infor means its more likely to be valid
- Kyrria  
Well know accredited University
- Kyrria  
Many people find this information useful.
- Kyrria  
I googled this acronym and now know what it means, summarised in my own words. fMRI's: Functional magnetic resonance imaging. Functional neuroimaging using MRI technology, measuring brain activity by measuring blood flow!
- Kyrria  
Accredited university - specific to medical
- Kyrria  
Done by fMRI
- Kyrria  
Old composers, but their music still has huge impacts - how much did they know?
- Kyrria  
Hippocampus - Naomi Penn Interview
- Kyrria  
So does this means silence is just as profitable?
- Kyrria  
Researching the effects of music has taken them so many more places.
- Kyrria  
What exactly is this?
- Kyrria  
By observing the blood flow.
- Kyrria  
Is this saying the music stimulates the brain after or silence is better?
- Kyrria  
Well qualified - Reliable
- Kyrria  
Classical period.
- Kyrria  
What does it mean to respond in a tightly sync...

Where to from here: D2/1

Whilst looking through the information in this source I have come up with a number of questions that I can look further into. These include does no music at all improve concentration more than background music? And what exactly is meant by tightly synchronized manner, in regard to the brain?

Source Analysis / Validity / Reliability: D2

This source was highly relevant to my topic as it focussed on whether baroque and symphony style music (classical genre), or no sound is better for brain performance (including concentration and attention), and how they test this by fMRI's. The information was valid and reliable as it is provided by the collaboration of many science research organizations, as well as quoting professor with PhD's in the area. As well as this the organization has done their own test using up-to-date and reliable methods of fMRI's. Also the information provided was published in 2007, which is reasonably recent compared to others sources, increasing the validity by providing up-to-date information. All this together makes the source a very useful and effective one - helpful for providing sound information to go towards my outcome.

How has my knowledge developed? D3


Through the analysis of this internet source, I have gained substantial information, which when combined with other sources I have analysed can give me new ideas and concepts to follow. This includes the way in which this source suggests classical music, as the genre it tested in their investigation which complies well with the other sources such as "How music Improves Worker Productivity" and "Music and the Brain". Joined together we come up with the idea of music needing to be background to concentrate, and maybe it is after listening to the music that the brain is stimulated and the effect is shown. Something to look into further - this is a very interesting finding.

Synthesis + cross-referencing.

at is music? how it affects moods, emotions, creating atmosphere Page 2 of 3

Unusual things happen when we combine tones of different pitches, called **Harmony**. Some combinations go well together and some don't. Those notes which combine well seem to be close to what's called the "harmonic sequence". The harmonic sequence is the completely natural set of different notes produced by something vibrating, and is most easily demonstrated musically using brass instruments. The lowest notes of this series are like those produced by a "natural" (without keys) instrument such as a bugle, and include octaves, fifths and thirds. These are just the notes which go well together to make "harmonious" sounds like major chords. On a stringed instrument you can demonstrate the lower notes of the harmonic series by playing the strongest "harmonics" of the strings which divide the length into fractions like halves, thirds, quarters, fifths, etc. These harmonics are always present to varying degrees with all notes, and their proportions help to give sounds their unique "timbre" or colour or tone.

*Handwritten notes:* "this is what makes up harmony!"



A minor chord differs from a major one by using a "minor third" interval. The minor third is further up the harmonic sequence and therefore sounds remote from the original note, which goes to make the minor chord sound darker and less natural. Other combinations of notes - even more remote on this sequence and can give rise to musical clashes or "dischords". It is worth observing at this point that our equal-tempered method of dividing a music octave into 12 identical intervals produces some notes which are approximately the exact values of the harmonic series, but nevertheless close enough to deceive most ears. Our long exposure to music based on these 12 notes means that they sound normal anyway.

**Conclusions and further information**

We haven't set out to define music and don't believe that it is possible to look at some of the parameters which combine to form music, we observe that some are quite natural in origin, coming from the natural world of sound production, some stem from our bodies physically and the natural movements, sounds and rhythms inherent in them, and others from the way our brains analyse data. These at a very basic level tell us something about why music affects us so. On top of this, on a more complex level, there is a whole host of cultural developments and conventions that we have constructed. See our section on [film music clichés](#) and decide which of these have a natural basis, or which are simply cultural conventions. Also see our article on [Humour in Music](#) which explores some of these questions in a light-hearted way.

*Handwritten notes:* "this is a long - this is intimate (but music is hard) too complex!"

If you are interested in the psychology of music, there are many reference books which you might want to check. Philip Dorrell has written a book on the subject called "What is Music?" whose central theory states that "music is a super-stimulus for a hitherto unknown aspect of speech perception". The book goes on to explain many different facets of music perception. Much more information about the book can be found at [whatismusic.info](#).

The monthly science magazine [Scientific American](#) featured an article in 2004 called [Music and the Brain](#) how different brain regions are involved in interpreting music, and how the functions of these regions change with the experience and training undertaken by musicians. And in 2009 the same magazine published some research on ways in which music affects our emotions, called [Why Does Music Make Us Feel?](#) and again in 2012 some research was reported explaining [why Music Intervals Sway Moods](#).

*Handwritten notes:* "I have this source - must mean it is reliable and reputable"

More recently [Scientific American](#) reported on research showing that when people sing together, their heartbeats begin to synchronise (article dated [18th July 2013](#)). Then further research showed that it is not just the beat that affects a walker's pace, different types of music affect stride length even if the music is at the same tempo. In general louder or more aggressive music seemed to create longer stride length (article dated [18th July 2013](#)).

The weekly science magazine [New Scientist](#) carried a number of articles about the emotional effects of music in its edition of 29th November 2003 under the umbrella title of "The Power of Music", including an interview with the Greek composer [Vangelis](#).

The [BBC News](#) web-site reports on studies that show Classical Music is effective when used to deter youths from congregating in places which might lead to antisocial behaviour.

This [video](#) shows that a cockatoo has a sense of rhythm, matching the beat when the tempo changes. Researchers who examined such videos on youtube speculate that the sense of rhythm is linked to parts of the brain used to process and imitate sounds - a talent which many birds have.

This [clever video](#) is about the "12 Tone" system of creating melodies but it touches on many of elements discussed in this article, particular pattern recognition and cultural expectations.

To explore research related to the possible impact of music on brain function and development including the [Mozart Effect](#), start at the following sites: the [Parenting Baby](#) section of the Suzuki Music Academy or [MozartEffect.com](#).

*Handwritten notes:* "I think something I can build up - relevant to my topic and highly recommended/reliable"

*Handwritten notes:* "what 190 is incredible!"

*Handwritten notes:* "Following this link I have learnt more about him and his guitar fragments"

*Handwritten notes:* "Something I have already explored further"

*Handwritten notes:* "they are a fully functional company!"

*Handwritten notes:* "updated 2013 fairly recent material"

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**Source Analysis:** D2

This source was very relevant to my topic as it focused and the science behind the effect of tones (pitch and volume) and rhythm, and how they affected various moods. This information is very creditable as it is from a website dedicated to music and the study of it. The author of this source, Jim Paterson is a composer of classical music, and therefore would have qualifications, and an extensive amount of knowledge on this topic to be trustworthy. The information gained is specific to my question and reliable - making it a very useful and effective source.

**How has my knowledge developed?** D3

From the source highlighting and annotating I have done on this source, I now know that the range of bpm used in music simulates the range of our heartbeats. This is very interesting information, as it explains, why we feel excited in a fast piece of music that increases our heartbeat, and relaxed in a slower piece of music which lessens our heartbeat (also simulating the breathing patterns of sleep). I have learnt that music suggest movement, which is why, when listening to some pieces of music you tend to feel energetic in the mood for running, because that is what the music is stimulating your mind to think. As well as this I have increase my knowledge of the 'language' of music. This include how music uses a rhythm and intervals between notes that are similar to speech, and how just as sad people tend to talk monotone, sad music tends to have very small intervals and a narrow range of frequencies compared with an excited person / piece of music.

**Where to from here:** D2/1

Following this source there are a number of links I would like to further explore. These include the New Science magazine article on "The Power of Music" and how it effects the emotions. This will help me further understand the effects f music on mood. I would also like to follow up the website links to "Music Intervals Sway Moods", as this expands on the section I already have and takes me down a different branch



## YOUTUBE VIDEO RESEARCH - EXAMPLES

**Source:** Treasure, J, 2012, The Mental and Emotional Effects of Music, video, accessed 8<sup>th</sup> April 2015, <https://www.youtube.com/watch?v=5UetE-077xw>.

D2

### Key Findings:

D3

The key findings I obtained from this were that when a piece has a constant slow repetition of '12 cycles' it is matching the breathing rate of sleep, and therefore is more relaxing than other, because of the rhythm and links associated. Also for concentration in a busy environment it is preferable to wear headphones, with music such as bird song especially, as the human mind has an instinct that when birds are singing it means 'all safe', and therefore easier to focus and concentrate on work at hand. This information coincides with the newspaper article "How Music can Improve Worker Productivity" which comments on the need for background noise, and builds on it by suggesting bird music. As well as this the case study I did on myself can add to this by suggesting classical music. So we can get from this that headphones, with background music such as bird or classical that has varying pitches and repetitive cycles is ideal for concentration.

### Relevance:

This Source is relevant to my question, especially when talking of the bird song being useful for **concentration**, as this relates straight back to my question, and will help me obtain answers to it.

### Reliability:

This Source is quite reliable as the presenter is a professor in music and has extensive knowledge on the topic, as well as the organization providing the video, being TED talks, a very well-known and reputable organization for recent scientific findings. ✓

**Source:** Wilde, J, 2013, *How Music affects your Brain*, video, accessed 8<sup>th</sup> April 2015, <https://www.youtube.com/watch?v=JpUVMpX62nw>.

D2

### Key Findings:

D3

Brainwaves resonate with the beat of the music making your breathing and heartbeat try to match the beat of the song. Listening to emotional music engages your hippocampus – the section of your brain controlling memory. This is used as music therapy for the elderly and those with alzima, to help them to recall memories, through the listening to of the music. This can be added to the information found in the magazine article – "The Symphony of Music" which explains the various brain parts being 'lighted up' when listening to music.

### Relevance:

This information obtained is relevant to my research question, as it includes the effects that this music has on **mood** and **concentration** by looking at the more technical side of the way in which it **impacts the brain**.

### Reliability:

This video is aimed at younger adults, and therefore the information provided may miss out some of the more complex concepts. The organization behind the video, are 'experts' as it says in the description, however I could not find any further information about their expertise. ✓

**Source:** Moffit, M, 2012, *The Scientific Power of Music*, video, accessed 8<sup>th</sup> April 2015, <https://www.youtube.com/watch?v=SePL2w5f6dE>.

D2

### Key Findings:

D3

In this source I have learnt a lot regarding the actual chemical science behind the music we hear. This includes the fact that some emotional reactions to music can cause a release of dopamine – 'feel good' hormone. This is why some music can be addictive. Music can also create Pupil dilation, increased blood pressure, and auditory movement in the emotional regions of your brain. This reflects the information gained in the book "How Music Works", which talks about the release of dopamine and increase in production adrenalin and heart pace.

### Relevance:

This source is relevant to my question in that it target the reason why some music makes us happy, and lifts our **mood** – due to the increase in dopamine hormone that it releases.

### Reliability:

This particular source can be relied upon as the authors are part of a creditable science organization called ASAPSCIENCE Inc., which is well credited and highly supported by the public and experts. ✓

## CASE STUDY ON MYSELF REGARDING CONCENTRATION:

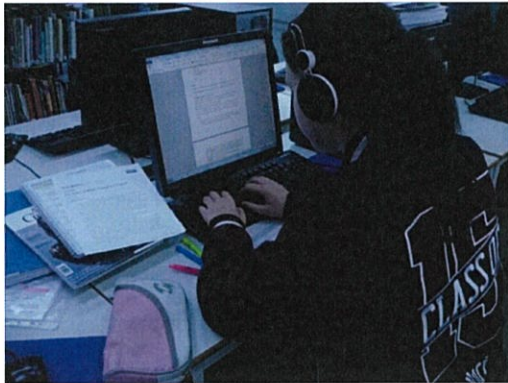
(D1) unusual resource

### Purpose of Case Study:

D1 The purpose of the case study was to practically analyse the effects of the classical music genre on the concentration of a subject. This would answer questions I had on regarding whether classical music does help concentration, and in what way?

### How the case study was conducted:

Over the period of four days, I listened to various classical compositions while doing work, for about 1.5 hours each day. I worked on a computer with headphones on the majority of the time, while other times I listened to music via stereo speakers. The composers of classical music that I listened to included: Bach, Mozart, and Beethoven.



### Observations and Conclusions made during the period:

D3/1 During the duration of my case study, I found that listening to classical music, especially with headphones on and especially Bach, tended to improve my concentration and focus substantially. This shows that music, especially when used as music therapy, is very effective over a short period of time. I was able to focus on my work, without being distracted by background noise or interactions with people, which was something I particularly struggled with prior to the study. I found I was able to listen to the music being played, and enjoy it, whilst still being focussed and totally concentrated on the work on hand, greatly increasing my work productivity. The music I listened to had very varying pitches and volumes, with a steady repetitive rhythm was medium – slow, but not so slow that it

made me feel lethargic. I concluded then, that listening to classical music with varying pitches and volume, but a steady medium-slow rhythm increases concentration and focus ability greatly and substantially increases work productivity. ✓

### Limitations of my Case Study:

- D2
- I had to rely on my own observations, to get useful information to answer my questions and fulfil the purpose of the case study.
  - I am not a trained behavioural psychologist or music therapist, so I need to rely on my own reaction and observations, which is less creditable.
  - For more accurate and reliable results, the duration of my case study should be over a few weeks rather than over 4 days. ✓✓

### Capability development:

D4 Throughout this particular research process I have increase my personal capabilities, and learnt of lot of information about myself which I had not previously known. I can now use this information I have learnt regarding classical music, and use it in the future and in other study areas to improve my work productivity and effectiveness. ✓

### Development of knowledge and learning:

D3 The information I obtained from this case study has improved my learning and knowledge of my question in the area of concentration, as mentioned in the observations and conclusion section previously. I have increased my knowledge on the swiftness of the effect that classical music has on concentration and answered the questions I had previously on whether or not classical music does actually affect concentration and focus and in what ways. The material I have obtained regarding this concludes that classical music does increase concentration and focus, by blocking out background noise and interruptions, and stimulating the brain, so that distractions do not arise. This proves the information I had obtained from my previous sources such as the interview with Naomi Penn, explaining slow bpm helps concentration and brain stimulation. It also proves the information gained in my secondary sources, including the websites "The Psychological Function of Music Listening" and "Music Productivity", which explains how slow classical music with varying pitches stimulates the brain to concentrate, and improve work productivity. As well as those, the information gained from the Newspaper article "How Music Can Improve Worker Productivity" is supported – which addresses the need for background noise to be cut out. The information gained from this case Study builds on and proves the other sources by testing there theories, and I found the concepts in many of my other sources to be right, increasing the validity and reliability of my findings. ✓✓ U!

### Where to From Here:

D2/1 Now that I have this information on concentration, I can compare the information obtained with the various case studies conducted, relating more to mood, and analyse the ways in which my sources coincide and agree. I can also move onto more secondary resources and fill in the gaps in my knowledge such as what areas of the brain are being affected by this classical music, and therefore why it has this concentrating effect. ✓

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