

2022

AP[®]

CollegeBoard

AP[®] Research Academic Paper

Sample Student Responses and Scoring Commentary

Inside:

Sample H

- Scoring Guidelines**
- Student Samples**
- Scoring Commentary**

© 2022 College Board. College Board, Advanced Placement, AP, AP Central, and the acorn logo are registered trademarks of College Board. AP Capstone is a trademark owned by College Board. Visit College Board on the web: collegeboard.org.

AP Central is the official online home for the AP Program: apcentral.collegeboard.org.

AP® Research Academic Paper 2022 Scoring Guidelines

The Response...				
Score of 1 Report on Existing Knowledge	Score of 2 Report on Existing Knowledge with Simplistic Use of a Research Method	Score of 3 Ineffectual Argument for a New Understanding	Score of 4 Well-Supported, Articulate Argument Conveying a New Understanding	Score of 5 Rich Analysis of a New Understanding Addressing a Gap in the Research Base
Presents an overly broad topic of inquiry.	Presents a topic of inquiry with narrowing scope or focus, that is NOT carried through either in the method or in the overall line of reasoning.	Carries the focus or scope of a topic of inquiry through the method AND overall line of reasoning, even though the focus or scope might still be narrowing.	Focuses a topic of inquiry with clear and narrow parameters, which are addressed through the method and the conclusion.	Focuses a topic of inquiry with clear and narrow parameters, which are addressed through the method and the conclusion.
Situates a topic of inquiry within a single perspective derived from scholarly works OR through a variety of perspectives derived from mostly non-scholarly works.	Situates a topic of inquiry within a single perspective derived from scholarly works OR through a variety of perspectives derived from mostly non-scholarly works.	Situates a topic of inquiry within relevant scholarly works of varying perspectives, although connections to some works may be unclear.	Explicitly connects a topic of inquiry to relevant scholarly works of varying perspectives AND logically explains how the topic of inquiry addresses a gap.	Explicitly connects a topic of inquiry to relevant scholarly works of varying perspectives AND logically explains how the topic of inquiry addresses a gap.
Describes a search and report process.	Describes a nonreplicable research method OR provides an oversimplified description of a method, with questionable alignment to the purpose of the inquiry.	Describes a reasonably replicable research method, with questionable alignment to the purpose of the inquiry.	Logically defends the alignment of a detailed, replicable research method to the purpose of the inquiry.	Logically defends the alignment of a detailed, replicable research method to the purpose of the inquiry.
Summarizes or reports existing knowledge in the field of understanding pertaining to the topic of inquiry.	Summarizes or reports existing knowledge in the field of understanding pertaining to the topic of inquiry.	Conveys a new understanding or conclusion, with an underdeveloped line of reasoning OR insufficient evidence.	Supports a new understanding or conclusion through a logically organized line of reasoning AND sufficient evidence. The limitations and/or implications, if present, of the new understanding or conclusion are oversimplified.	Justifies a new understanding or conclusion through a logical progression of inquiry choices, sufficient evidence, explanation of the limitations of the conclusion, and an explanation of the implications to the community of practice.
Generally communicates the student’s ideas, although errors in grammar, discipline-specific style, and organization distract or confuse the reader.	Generally communicates the student’s ideas, although errors in grammar, discipline-specific style, and organization distract or confuse the reader.	Competently communicates the student’s ideas, although there may be some errors in grammar, discipline-specific style, and organization.	Competently communicates the student’s ideas, although there may be some errors in grammar, discipline-specific style, and organization.	Enhances the communication of the student’s ideas through organization, use of design elements, conventions of grammar, style, mechanics, and word precision, with few to no errors.
Cites AND/OR attributes sources (in bibliography/ works cited and/or in-text), with multiple errors and/or an inconsistent use of a discipline-specific style.	Cites AND/OR attributes sources (in bibliography/ works cited and/or in-text), with multiple errors and/or an inconsistent use of a discipline-specific style.	Cites AND attributes sources, using a discipline-specific style (in both bibliography/works cited AND in-text), with few errors or inconsistencies.	Cites AND attributes sources, with a consistent use of an appropriate discipline-specific style (in both bibliography/works cited AND in-text), with few to no errors.	Cites AND attributes sources, with a consistent use of an appropriate discipline-specific style (in both bibliography/works cited AND in-text), with few to no errors.

Academic Paper

Overview

This performance task was intended to assess students' ability to conduct scholarly and responsible research and articulate an evidence-based argument that clearly communicates the conclusion, solution, or answer to their stated research question. More specifically, this performance task was intended to assess students' ability to:

- Generate a focused research question that is situated within or connected to a larger scholarly context or community;
- Explore relationships between and among multiple works representing multiple perspectives within the scholarly literature related to the topic of inquiry;
- Articulate what approach, method, or process they have chosen to use to address their research question, why they have chosen that approach to answering their question, and how they employed it;
- Develop and present their own argument, conclusion, or new understanding while acknowledging its limitations and discussing implications;
- Support their conclusion through the compilation, use, and synthesis of relevant and significant evidence generated by their research;
- Use organizational and design elements to effectively convey the paper's message;
- Consistently and accurately cite, attribute, and integrate the knowledge and work of others, while distinguishing between the student's voice and that of others;
- Generate a paper in which word choice and syntax enhance communication by adhering to established conventions of grammar, usage, and mechanics.

How palm muting affects the negative perception of metal music

Introduction

An area which needs to be explored is the realm of heavy metal. With its popularity within multiple generations, spanning around 50 years, there must be more talk about why? What exactly makes metal, metal? Is it the gimmicks of long hair rockers or face paint or even satanic imagery? Are the answers found in the lyrical content and era of the times? Or is it simply the composition of specific instruments coming together to provide the most gnarly sounds known to man? My exploration was not into the musical composition of metal but rather what part of metal gives it, its bad reputation. Initially when heavy metal is brought up there is a negative connotation. Whether it be rebellious teenagers, dangerous bikers, or even demon worshipping cults. At first, I believed ideas of vocal delivery, down tuning or even messages/themes were to blame for these stereotypes. And while I do believe they play a factor, very few people take palm muting into account with this discussion.

Palm Muting is the act of using your outer palm to lessen vibrations on guitar strings in order to dampen the actual note and focus more on the rhythm. This is part of the reason why heavy metal has less focus on melody and harmony and more on depth, percussion, and the “heavy” sound. Most listeners tend to dislike this less melodic style of music and could add to this perception. So, I propose this guitar technique is a key component for metal being so widely hated. While the technique is not exclusive to metal it is a cornerstone of the genre. Interestingly enough, it is extremely popular in all denominations of rock and even other genres such as country and rap. No genre uses palm muting to the extent of heavy metal, therefore there should

be some sort of affect. Studies have analyzed how palm muting plays a role in crafting a heavy sound, however, few investigations have evaluated the effect of this technique on the perception of music.

Literature Review

In my research it was difficult to find extensive studies in which palm muting was discussed, let alone the main discussion. Although a few articles did greatly shape my understanding behind the perception and criticisms of metal music. Sonic Elevation breaks down metal misconceptions and explains them to the non-listener. For example, the stigma around metal music being satanic is simply explained as a means to gain popularity, shock value, and fear. This form of music is based on rebellion, and it would make sense that the overall image is presented this way. In the same light that Communism strikes fear in the citizens of our capitalist society, the imagery of Satanism shocks and challenges the largely Christian status of the world. This later became my expectation for the negative perception that I would receive in my results.

Accompanied by down tuning most of the time, palm muting allows the guitarist to make their instrument sound deeper and more percussive. Usually used during the verse or a bridge, this technique adds depth and uniqueness to the song. Because while a metal song can only be a few chords, palm muting some of them gives the illusion there is more. This shares an eerie similarity to Gregorian chant. Chaz Muth writes about this in "A brief history of Gregorian Chant." Originally used in the Catholic Church the chants are in "unison without rhyme, meter or musical accompaniment, with the tones rising and falling in an unstructured fashion." In other words, very simple and powerful melodies with almost random rhythm and harmony. This sounds all too familiar as complex guitar rhythms can be created by the precise use of muting/unmuting the strings. A prime example of this would be in "Nightmare" by Avenged

Sevenfold during the second section of the song. The faster part allows for some fast palm muting/unmuting. This, combined with the drum groove, gives the song an interesting verse.

While analyzing the criticisms of metal and its negative perception, it was apparent the answers were very surface level, as this type of music has technically existed since the beginning of time.

Along the lines of analyzing heavy metal as a legitimate form of music, Unravel Magazine discusses another aspect to metal that draws a similar comparison to palm muting: screaming. Essentially, the main theme here is immense skill. To achieve screams that can be maintained and healthy on the level of metal singers; enunciation, control of vocal folds, diaphragm use, and tongue placement are needed, just to name a few. Screaming is a form of vocal expression just like singing; therefore, it utilizes the same techniques, only to the extreme. Shaping the mouth and forming the correct vowels needed with the right breath support and pitch placement is crucial to both types of singers. It can even be argued it is harder to sing metal because both the pitch and intensity must be correct. The gravelly-ness and the frying that comes along with the genre adds to the difficulty for the singer. This comparison is the same for palm muting.

Guitarists use the technique all the time, but not to the extreme metal does. And that takes immense skill. Once again, this criticism and negative perception of metal music was superficial and only increased my interest in the role palm muting had to play.

As mentioned before no research had been done considering palm muting when talking about perception. Going in understanding that negative perception and the legitimacy of heavy metal and palm muting, I was fully prepared to delve into the field.

Methodology

I chose to display 5 sets of songs and their accompanying lyrics. One by Metallica and Stary Olsa, Aerials by System of a Down and Robyn Adele Anderson, A Little Piece of Heaven by Avenged Sevenfold and Fatin Majidi, Break Stuff by Limp Bizkit and K.Flax, and Since U Been Gone by A Day to Remember and Kelly Clarkson. These songs were specifically chosen to capture the large array of metal subgenres. Participants listened to thrash metal, alternative Metal, nu-metal, and metalcore. With each section chosen using palm muting, some more than others, participants would be expected to answer a main survey of 5 repeating questions per set.

- 1) What were the messages the songs were trying to convey?
- 2) Which artist was more effective at portraying that idea? Artist 1 or Artist 2
- 3) Did the emotions conveyed by artist 1 match the theme? Yes or No
- 4) Did the emotions conveyed by artist 2 match the theme? Yes or No
- 5) Which artist's emotional state matched the theme better? Artist 1 or Artist 2

These questions were chosen in order for the participants to think critically about the songs lyrical content in hope to obtain the most objective decision possible. By making the participants choose one over the other, based on which one essentially represented its theme or emotion better, the results would easily show if metal with palm muting was favored or not. Experimental research was the easiest way to reach my results using real people, as virtually no research had been done at all. And to see the cause-and-effect relationship that palm muting and the poor reception of metal. I theorized that the songs containing palm muting would be chosen the least, therefore showing the connection between palm muting and the negative perception of metal music.

Participants

I gathered participants using a preliminary survey. Asking demographic questions such as age, grade, and gender along with contact information. I planned to gather students through their school email or through their teachers as I had ID numbers. Additional information included the types of classes students are taking, their sports, jobs, and any other after-school activities. I was aiming for around 50 students with a variety of backgrounds and musical expertise. The goal was to use this information and take it into consideration when analyzing my data.

Materials

Using class time and school provided technology I followed through with my vision. By creating both the preliminary and main survey using Microsoft forms it was extremely easy to distribute to the masses, in places such as teams, remind, etc. The lyrics and links for each song were copied word for word onto a word document and presented to the class by smartboard.

Procedure

This section will refer heavily to the main survey and the questions mentioned above. For the first set of songs participants listened to One by Metallica seconds 4:33-5:11 and viewed the lyrics:

Darkness

Imprisoning me

All that I see

Absolute horror

I cannot live

I cannot die

Trapped in myself

Body my holding cell

the survey results demonstrated that the participants got the general idea the song wanted to express ideas of death, darkness, escape, etc. and thought the emotions conveyed matched the theme (Question 1). They then listened to an earlier part of that song (3:17-3:42) but by a different artist. This was a “medieval” cover by Stary Olsa which did not use palm muting. Then a 15-11 decision was made for artist 2 conveying the theme (Question 4). The closer vote pointed toward Metallica being a better fit. Which is exactly what the participants overwhelmingly voted for in every other question.

The second set contained the lyrics:

Cause we are the ones that wanna play

Always wanna go

But you never wanna stay

We are the ones that wanna choose

Always wanna play

But you never wanna lose

Aerials in the sky

When you lose small mind

You free your life

at minute 2:09-2:53 of Aerials by Robyn Adele Anderson. More insightful answers were given in response to the open-ended interpretation question with the consensus being on freedoms given within a society. However, Aerials by System of a Down got more votes for portraying the ideas and matching the theme (Questions 2 and 4) with just slimly beating the cover for matching the theme better overall (Question 5).

The third set features a metal song by a group mentioned earlier: Avenged Sevenfold.

However, A Little Piece of Heaven by Fatin Majidi is played first with the lyrics:

Before the story begins

Is it such a sin

For me to take what's mine

Until the end of time?

We were more than friends

Before the story ends

And I will take what's mine

Create what God would never design

Our love had been so strong for far too long

I was weak with fear that something would go wrong

Before the possibilities came true

I took all possibility from you

Almost laughed myself to tears (Ahahaha)

Conjuring her deepest fears (Come here you f**king b**ch)

Must have stabbed her fifty f**king times

I can't believe it

Ripped her heart out right before her eyes

Eyes over easy, eat it, eat it, eat it

at 0:00-1:28. While these lyrics are morbid and may be gross to digest, they were the most interesting to analyze. Participants were correct in their assumptions that the song was about love and murder (Question 1). There was also less of a tie between song 1 and 2 on which matched

the theme with Avenged Sevenfold/song 2 being a clear winner (Question 4). Participants preferred the palm muted version so much so that as soon as the palm muted intro started the room was filled with comments of “Wow that sounds great,” “it reminds me of Halloween,” “this one is good.” This was very similar to Aerials by System of a Down, where a participant later asked me for a list of the songs I used as he was interested in listening to them recreationally.

The fourth set put Limp Bizkit (palm muted) and K.Flay against each other for the song Break stuff:

It's all about the he says/she says bulls**t

I think you better quit lettin' shit slip

Or you'll be leavin' with a fat lip

It's all about the he says/she says bulls**t

I think you better quit talkin' that s**t

Punk, so come and get it

at 2:29- 2:47. This particular song utilizes profanity to get its point across which was an important point during the procedure. Once again, the lyrical analysis was spot on (Question 1) with a close decision on if the cover song matched the theme and a landslide for the Limp Bizkit song matching theme (Question 4 and 5). It was extremely clear how the palm muting added to the aggression the lyrics implied.

Lastly, Kelly Clarkson was paired up with A Day to Remember for Since U Been Gone for minutes 1:53-2:33:

Out of sight, out of mind

Shut your mouth, I just can't take it

Again and again, and again, and again

Since you've been gone

(Since you've been gone)

I can breathe for the first time

I'm so moving on

Yeah, yeah

Thanks to you (thanks to you)

Now I get, I get what I want

This set seemed to be a bit of an outlier as everything was in favor of the non-palm mute song. Question 1 was answered easily with the message clearly being about heartbreak and leaving a relationship. While both matched the theme for Questions 3 and 4, Kelly Clarkson blew the metal song out of the water.

Limitations

My original plans did not go as smoothly as I predicted. While my preliminary survey went perfectly, I received less feedback than projected. Even with that small test group, I did not have the proper resources to locate all the participants. So, the test group in this paper was extremely small and had a specific demographic. While these 27 had great diversity of race, ethnicity, gender, and extracurriculars they all belonged to advanced classes. Since my original survey was impossible to use, my demographics for these 27 are not completely accurate. My materials used proved to be sloppy since there was plenty of dead time between sets and participants answered questions at their own pace, without my supervision. Multiple times participants discussed among themselves as well while this was an individual activity. Even with these limitations, my main survey itself was flawed. 5 questions became a lot per set, which led

to participants answering fast during sets to get through all 25. Questions 3 and 4 in retrospect are irrelevant due to the emotional state matching the theme every time. The question is easy yes as no participant was quick to invalidate art. The except being Question 3 on set 4 where the Break Stuff cover was clearly missing the point without palm muting. In the selection of songs some sections may be debated over if palm muting is used or not. While the same effect mentioned toward the beginning of the paper is given of being deeper and more percussive, it can be argued that that it is due to the distortion or tuning used along with the drum part played with it. It was a challenge to find clear examples of palm muting along with examples of the same songs without palm muting. My research relied heavily on covers and the availability of non-palm muted covers, which was sparse. This may have affected my results as these covers were drastically different than the original palm muted metal songs, losing all distortion and groove. If the opportunity arose to repeat this process, I would list better contact information, with phone numbers or emails, but paired with an announcement to check inboxes. Or at least have the new 27 give me demographic information to accurately discuss in my results. Instead of using Word, PowerPoint seems the most concise path of action. Lyrics would be easily viewable as the songs played if they were inserted into the slides. This would eliminate dead time and the directions could also be clearly displayed for all to be quiet and work individually. As for the song selection, they should be reviewed by a professional musician to get the most accurate palm mute possible. Perhaps personally editing palm muting out of the original songs would have also been beneficial. I opted out of this however seeing as I am not an editor, and this too could also drastically affect the musical composition of the piece. A major flaw here is metal music truly cannot be separated from the palm mute. As for the main survey questions, however, I would

eliminate Q3 and Q4 and perhaps replace them with more open-ended explanations for Q2 and Q5 as those are the ones that showed the most results.

Discussion

After looking at the survey I came to the conclusion that my hypothesis was incorrect; participants overall chose the palm muted songs. Questions 2 and 5 were largely in favor of metal songs for sets 1-4 with 4 being clearly for palm muting and set 2 being a bit closer to tying. Set 5 was the only clear one for no muting.

This can be explained while looking at the Limp Bizkit song (set 4). The lyrics have an aggressive tone about them with the theme about putting “talkin' that s**t” to an end. So, when the nu-metal version of the song palm muted in this section of the song it added to the participants understanding of the music. K.Flay chose to go a more lo-fi and reverbed sound which, as the survey showed, did not match the theme or emotional content of the song as well as palm muting. This was my first hint in the data that the connection between palm muting had nothing to do with the connotations it presents but rather its themes. The same could be said in set 3 where Avenged Sevenfold sang about murder and necrophilia. There was public outcry when Majidi sang the song straight instead of with metal vocals and palm muting. Palm muting creates an atmosphere for these types of topics to be discussed. It seemed harder for participants to digest the lyrics when it was presented in a “pop” way. More general ideas and topics such as death and darkness (set 1) allowed for more musical liberties and a closer tie in the survey.

Set 5 proved an interesting point, however that established music locks in perception. Since in set 5 the cover was the palm muted version of the extremely popular Kelly Clarkson song Since U Been Gone. A better version already existed, and this is where the negative

perception came into play. Participants felt that the distortion, screaming, and palm muting of metal was not needed, as in this instance the lyrical content and intended emotion was already matched perfectly with Clarkson.

This phenomenon is likely due to the age of the participants. The 27 responses were students from ages 16-18 in Advanced Placement classes. In other words, the best and the brightest Generation Z has to offer today. Gen Z exists in an era of pop culture where melding and fluidity is common. People are allowed to like and enjoy a number of things. Enjoy both country and rap. Pop and metal. And this is what they are used to: genre-fluidity. There is little to none, negative perception of metal music within the AP teens. This could also be why the interpretation of the lyrics were generally correct, as interpretations are frequently done in more advanced classes. Unaware of the point behind the survey, teens 16-18 answered based off of their own personal tastes and bias. Even though the questions asked for objectivity, the genre-melding background of Gen Z played a big factor in the preference of metal music and lack of stereotype. Most students were not familiar with or did not recognize the metal music used, which is clear open-mindedness on display. Even greater questions are raised about how other groups would react to this type of research. AP teens 16-18 were curious and excited about the music heard but, does this go for all 16–18-year olds? All those between the ages 13-19? How would the original teens that were there when metal first began forming in the 70s react? This research could be replicated and even improved upon by applying it to other demographics.

Conclusion

The future of music points towards more rock and metal-infused tracks. For example, Trippie Redd's 2021 rock album Neon Shark Vs. Pegasus. Originally Trippie gained fame through this rap career and the SoundCloud rap scene. His fan base remains largely for his

rapping style and vibe of his music, although they are up for experimentation. Trippie partnered with pop-punk drummer Travis Barker and focused this album on the rock element of guitars, bass, drums, etc. The relatively well received album did include palm muting. Other examples of this rock ability in popular music today include Olivia Rodrigo and Machine Gun Kelly. Sour by Rodrigo includes songs that remind many fans of rock bands of the 2000s. This specific 2000s progression includes tons of palm muting. And fans adore her sound. MGK's Tickets to my Downfall and Mainstream Sellout albums also utilized pop-punk drummer Travis Barker. Kelly even collaborated with the lead singer of the metal band Bring Me the Horizon, Oliver Sykes on their song Maybe. Bring Me the Horizon now leans more to the pop and indie side but originally were heavy into metalcore and deathcore. They have even merged their original fanbase of metalheads and pop listeners together. These artists have shifted their sound either towards the pop or rock spectrum over time, but it seems the fans want both. In the 80s, 90s, and even part of the early 2000s rock and pop were one in the same. With insanely popular bands from KISS to Van Halen to Nirvana to Paramore. Trends in pop culture have been known to come back over time. My results seem to theorize that rock will become mainstream once again. If newer groups or even bands add palm muting into their repertoire, the target teen audience will tune in. While many have claimed the era of bands has been long gone and will never return, this research may allow rock groups to come back. Of course, there is an element of nostalgia here as the older generation would love to see the era of bands resurface. To be clear, palm muting would not be the only factor in bringing bands back or more rock-based music into the limelight. It would need this nostalgia factor from the cyclical trend theory to get everyone on board. Along with like-able members, attractive messages, and of course good music. At this point in time, 2022 "rockers" are people have shifted over. They have had a fan base who agreed with their

messages and music. Unfortunately, these rockers still live in 2022 where mainstream focus is on popstars, celebrities, and idols, not groups. So even here there are limitations to the implication of my results. Nonetheless tracking this phenomenon and delving into other demographics could be of relevance in the coming years.

Works Cited

Dom (24 May 2018). "Why Do People Like Heavy Metal Music?" Sonic Elevation. Retrieved 11 October 2021 [Why Do People Like Heavy Metal Music? \(sonic-elevation.com\)](https://sonic-elevation.com)

Lee, Hadi. (12 Feb. 2015) "Heavy Metal screaming: Skill or sham?" Unravel Magazine. Retrieved from 11 October 2021. [Heavy Metal screaming: Skill or sham? | Unravel Magazine \(unravellingmag.com\)](https://unravellingmag.com)

Muth, Chaz. (7 March 2018.). "A brief History of Gregorian Chant". American Magazine. Retrieved from 11 October 2021. [A brief history of Gregorian chant | America Magazine](https://americamagazine.com)

Appendix A

Heavy Metal Listening Questions

Answer the questions when prompted

1. What were the messages the songs were trying to convey?

Enter your answer

2. Which artist was more effective at portraying that idea?

Artist 1

Artist 2

3. Did the emotions conveyed by artist 1 match the theme?

Yes

No

4. Did the emotions conveyed by artist 2 match the theme?

Yes

No

5. Which artist's emotional state matched the theme better?

Artist 1

Artist 2

Academic Paper

Note: Student samples are quoted verbatim and may contain spelling and grammatical errors.

Sample: H

Score: 2

This paper earns a score of 2. The paper begins with a topic of heavy metal music (page 2, paragraph 1) but narrows to the musical technique of palm muting at the end of the same paragraph. The paper contends that palm muting, “is a key component for metal being so widely hated” (page 2). The paper acknowledges that there are studies that have “analyzed how palm muting plays a role in crafting heavy metal sound” but introduces the gap by stating that “few investigations have evaluated the effect of this technique on the perception of music” (page 3, paragraph 1). While the paper presents a literature review, it only provides three sources, none of which are scholarly.

The methods of the research are introduced on page 5. The paper notes that the student “chose to display 5 sets of songs and their accompanying lyrics” and then requested that participants “answer a main survey of 5 repeating questions per set” on page 5. The paper does not provide detail on how or why certain musical selections were chosen to present to participants, nor does it provide detail on participant recruitment, other than that the author had access to student ID numbers. As the primary focus is to understand how palm muting influences music perception, not providing detail on how musical selections were chosen makes the methods non-replicable. The paper presents a conclusion on page 14, arguing that “rock will become mainstream once again.” However, this conclusion does not seem to be driven by student-generated evidence.

This paper does not earn a score of 3 because the methods are not reasonably replicable, and the new understanding is not derived from student-generated evidence.

The paper does not earn a score of 1 because there is a narrowing topic and there is a description of a non-replicable method.