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# The “Mozart Effect”

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## Publication Statement

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Topic: The “Mozart Effect”

Summary: The “Mozart Effect” is a name given to a supposed increase in cognitive functions due to listening to music before, or during, a task, such as taking a test. The name comes from the media after the original study, done by Rauscher, Shaw, and Ky, used Mozart’s Sonata for Two Pianos in D Major.

Annotated Bibliography

1: Bressler, Randy A. “Music and Cognitive Abilities: A Look at the Mozart Effect.” PsyD diss., Chicago School of Professional Psychology, 2003. https://www.proquest.com/pagepdf/305228684?accountid=14608.

Randy Bressler argues that the results of a new study, with altered parameters, does not support the original study conducted by Rauscher, Shaw, and Ky. The original study found that listening to music, Mozart’s Sonata for Two Pianos in D Major, activated both sides of the brain and increased cognitive function. The cognitive function that increased was spatial reasoning. The new study, done with five-year-olds, saw two groups, one with music, and one without. The two groups colored pictures in coloring books and then took a test that measured different types of memory. The study results did not support the findings of Rauscher, Shaw, and Ky.

This source communicates indirectly with the other sources on this list, both supporting and opposing the views and results held by the other sources. Due to the varying results that come from experiments in this subject, Bressler’s results support and oppose the results of other

studies in this paper. Randy Bressler wrote this dissertation to fulfill his requirements needed to complete his doctoral degree from The Chicago School of Professional Psychology. This paper was accepted by the faculty of the school. This paper provides another study to analyze for answers about the reality of the "Mozart Effect." This study shows that, in these specific parameters, the cognitive abilities of five-year-olds are unaffected by music.

2: Aheadi, Afshin, Peter Dixon, and Scott Glover. "A Limiting Feature of the Mozart Effect: Listening Enhances Mental Rotation Abilities in Non-Musicians but not Musicians." *Psychology of Music* 38, no. 1 (July 2009): 107-117. https://doi.org/10.1177/0305735609336057.

The argument that Aheadi, Dixon, and Glover are making is that listening to complex music, such as the compositions of Mozart, activate the right hemisphere of the brain. However, their argument is that this activation affects only non-musicians. The reason musicians are not affected by this is because musicians process music through both hemispheres of the brain. The evidence this source bases their argument on is a study done by Aheadi, Dixon, and Glover. The study, using non-musicians and musicians doing the same task, proves their argument correct.

This source agrees with the idea of a "Mozart Effect" and proves that the conditions are more exact than scientists thought before. This source calls back to the original study done by Rauscher, Shaw, and Ky, and expands upon their experiment. Aheadi, Dixon, and Glover are all employed by the Royal Holloway of London as professors. This source is relevant because it realizes the shortcomings of studies done on this topic, and proves that, under the right circumstances, the "Mozart Effect" is real.

3: Beauvais, Clémentine. “The ‘Mozart Effect’: A Sociological Reappraisal.” *Cultural Sociology* 9, no. 2 (November 2014):185-202. https://doi-org.du.idm.oclc.org/10.1177/1749975514557096.

Beauvais argues that the cultural phenomenon that is the “Mozart Effect” is a culmination of the original study done by Rauscher, Shaw, and Ky, the interest of the public in intelligence testing and education, specifically for children, and the idolization of certain classical composers, such as Mozart. The evidence Beauvais uses is multi-faceted. In her paper, she uses historical and sociological texts, as well as scientific studies such as ones like Randy Bressler’s in source 1. By using this evidence, she proves her argument that the original study caused immense interest in the subject of the “Mozart Theory.”

This paper draws upon a multitude of different sources and communicates with them, for the most part, indirectly. The argument that Beauvais is making doesn’t lend itself to agreeing or disagreeing with any specific source, but she does frame her paper on the premise that most results are contrary to the original study, or that the results are varying among studies. Beauvais is an author, a teacher, and has worked/studied topics involving child intelligence. Her authority on this topic is based on her work and knowledge of these topics. This paper gives us the context of the time in which the “Mozart Theory” exploded into the mainstream, as well as why it did.

4: Duke, Robert A. “The Other Mozart Effect: An Open Letter to Music Educators.” *Update: Applications of Research in Music Education* 19, no. 1 (Fall-Winter 2000): 9-16. https://doi.org/10.1177/875512330001900103.

Duke argues that, though the “Mozart Effect” has minimal to non-existent effects, there are other, substantial, effects that happen because of music and the music-making process. Duke,

through his own observations, lists the impact that music has on students of various ages. This evidence is purely experiential; however, it is not a small pool of experiences as Duke has been observing these effects for over 15 years.

Duke disagrees with the importance of the minimal effect that music has on intelligence. He writes that he appreciates the scientific focus on aspects of music, but that there are far more substantial things to be looking into. His communication with these studies is short and indirect, not mentioning any study in particular, but the studies as a whole. Robert Duke is a music educator with, at the time, over 15 years of education experience. His authority comes from the hundreds of students he observed over those 15 years. This paper is relevant because even if the "Mozart Effect" as it is currently defined does not exist, there are still areas of music to study. There are still possible benefits that haven't been thoroughly tested and this paper is a call to test them.

5: Hetland, Lois. "Listening to Music Enhances Spatial-Temporal Reasoning: Evidence for the 'Mozart Effect'." *The Journal of Aesthetic Education* 34, no. ¾ (Autumn-Winter 2000): 105-148. https://doi-org.du.idm.oclc.org/10.2307/3333640.

Hetland argues that the "Mozart Effect" is real, but we need more data. She states that current tests show marginal results, with promise for stronger results with changing stimuli and circumstances. She notes the specificity of the current studies, and argues that certain cognitive functions improve with different aspects of music. The evidence Hetland uses is scientific studies such as Rauscher, Shaw, and Ky's original study. She performs a meta-analysis of multiple different studies and finds correlations between them. This evidence is appropriate for this paper and certainly proves the argument she is making.

Hetland communicates directly with the sources she includes, listing their aspects, what the studies excel at, and what their limitations are. Lois Hetland is a professor as well as a chair of art education at Massachusetts College of Art and Design. She is also a senior research affiliate for Project Zero, a project headed by Harvard University. She derives her authority from years of experience in research, as well as in the arts. This source is relevant because it is an analysis of a multitude of studies. The paper provides information on what studies are promising, as well as the limitations and shortcomings of these studies.

6: Jenkins, J.S. "The Mozart Effect." *Journal of the Royal Society of Medicine* 94, no. 4 (April 2001): 170-172. https://doi.org/10.1177/014107680109400404.

Jenkins paper is a look into what parts of the brain are activated when listening to music, how that might affect different types of reasoning and intelligence, and what factors change the effects of the studies. Similarly to other sources, this paper uses several studies, of various results, to show how results can differ from study to study because of seemingly small differences between them. This evidence is perfect for the argument that Jenkin's is trying to make and it supports their argument perfectly.

This paper communicates with the studies it references both indirectly and directly. Jenkins does not necessarily agree or disagree with a study, but instead points out the different factors of a study that led to its result. Jenkins authority is derived from his experience in medicine and as a doctor. This source is relevant because Jenkins pinpoints specific differences that change the outcome of these different studies. This means that the discrepancy between studies is not due to the "Mozart Effect" being an outright farce, but instead is due to changes in the environment and the characteristics of individuals.

7: Reimer, Bennett. “Facing the Risks of the ‘Mozart Effect’.” *Arts Education Policy Review* 101, no. 2 (1999): 21-26. https://doi-org.du.idm.oclc.org/10.1080/10632919909600238.

Reimer’s paper addresses an issue seen by music educators. He argues that the proliferation of studies into the “Mozart Effect” will lead to the ruination of music education. His reasoning for this is that music education, as it currently stands, provides value in the form of teaching individuals the craft of making music. Through this, the students gain the multitude of benefits that music provides. Reimer sees the “Mozart Effect” as a danger because he believes that the music programs will be filled with students who are not there for the enrichment of a music education, but for the “intelligence boost” that music provides. Reimer worries that music education will have to be justified under these new findings and that the education will change course to fulfill the “Mozart Effect.” The evidence that Reimer uses is observational and experiential. While this evidence does support his claims, this evidence is not necessarily concrete. Most of this information is predictions and what Reimer thinks would happen.

This paper directly communicates with Rauscher, Shaw, and Ky’s original study, as well as their updated studies. Reimer does not disagree with the findings of these studies, he doesn’t like the effect of the findings. Bennett Reimer was a revered music educator who held multiple distinguished positions throughout his career in education. This source is relevant because it brings to light an interesting side effect of these studies. The ramifications that Reimer brings up are completely left out of any other source on this list.

8: Rauscher, Frances H., Gordon L. Shaw, Katherine N. Ky. “Listening to Mozart Enhances Spatial-Temporal Reasoning: Towards a Neurophysiological Basis.” *Neuroscience Letters* 185, no. 1(1995): 44-47. https://doi.org/10.1016/0304-3940(94)11221-4.

Rauscher, Shaw, and Ky argue that listening to music, in this case a Mozart piano sonata, increases short-term spatial-temporal reasoning skills. The evidence this source uses is a study conducted by Rauscher, Shaw, and Ky. They used college students and made them listen to Mozart's Sonata for Two Pianos in D Major. This experiment is great evidence to prove their argument as it shows that their hypothesis is correct.

Rauscher, Shaw, and Ky's paper was the first paper to bring the "Mozart Effect" to the mainstream. While this paper does not communicate with the other sources on this list, the other sources certainly communicate with this paper in some capacity. All three authors are employed at the Center for the Neurobiology of Learning and Memory. Since the experiment they conducted was directly related to neurobiology and learning, their authority comes from their experience in the field. This source is relevant because it is the first of its kind. All the other sources on this list are in some way descendants of this paper. This source shows what the original hypothesis was, as well as how the original experiment was done.

9: Husain, Gabriela, William Forde Thompson, and E. Glenn Schellenberg. "Effects of Musical Tempo and Mode on Arousal, Mood, and Spatial Abilities." *Music Perception: An Interdisciplinary Journal* 20, no. 2 (Winter 2002): 151–171. https://doi.org/10.1525/mp.2002.20.2.151.

Husain, Thompson, and Schellenberg argue that the tempo and mode of a piece directly effects a person's performance on spatial tasks. The evidence used to support this argument was a study done by Husain, Thompson, and Schellenberg involving different groups of individuals listening to the same piece in different modes/tempos and then performing spatial tasks. This evidence is appropriate and supports their argument.

This source communicates indirectly with studies such as Rauscher, Shaw, and Ky's. This paper agrees with the hypothesis of the "Mozart Effect" and looks to narrow the results down to find important factors of music that might change the results of similar studies. Husain is a graduate student at York University where Thompson is a professor of psychology. Schellenberg is a professor at the University of Toronto. Their authority is derived from their experience in psychology. This source is relevant because it pinpoints two important parts of music, tempo and mode, that directly effects the results of studies involving the "Mozart Effect."

10: Steele, Kenneth M. "Do Rats Show a Mozart Effect?" *Music Perception: An Interdisciplinary Journal* 21, no. 2 (Winter 2003): 251-265. https://doi-org.du.idm.oclc.org/10.1525/mp.2003.21.2.251.

Steele argues that the results of a study done by Rauscher, Robinson, and Jens, involving rats who are exposed to a Mozart piano sonata in utero and while they were being reared, was not a legitimate result. The experiment showed that rats who were exposed to the music completed a maze faster than rats who were not exposed to music. Steele argues that rats are deaf while in utero, and adult rats are shown to be deaf to most of the notes that are present in the Mozart piano sonata that Rauscher, Robinson, and Jens used. The evidence that Steele uses is studies on rats involving how their hearing works and is extremely effective and supports his argument.

This source does not communicate with the sources on this list, but he communicates directly with the study that he is challenging by Rauscher, Robinson, and Jens. Steele is a professor of psychology and uses this position as his authority. This source is relevant because it shows the potential factors, such as rats being deaf to most notes, that can be completely missed by some of these studies.

11: Trappe, Hans-Joachim. “The Effect of Music on Human Physiology and Pathophysiology.” *Music and Medicine: An Interdisciplinary Journal* 4, no. 2 (April 2012): 100-105. https://doi.org/10.47513/mmd.v4i2.287.

Trappe argues that different types of music has potential benefits for individuals with specific conditions. For example, Trappe finds that vocal and orchestral music effects cardiovascular and respiratory health significantly more than other types of music. The studies that Trappe uses in his paper are different pieces of evidence for how different genres of music could effect individuals with specific conditions. Evidence such as this is extremely effective at supporting his argument.

Trappe’s paper does not communicate with the other sources on this list. Trappe is a cardiologist and leans on his expertise as his authority. This source is relevant because it shows a physical benefit that music can provide to people. The other sources on this list are almost all involving the mind and intelligence. Trappe provides an original look at a different take on the “Mozart Effect.”

12: Thompson, William Forde, E. Glenn Schellenberg, and Gabriela Husain. “Arousal, Mood, and The Mozart Effect.” *Psychological Science* 12, no. 3 (May 2001): 248-251. https://doi-org.du.idm.oclc.org/10.1111/1467-9280.00345.

The second source from these three authors, they argue that the “Mozart Effect” is actually an arousal and mood response to music as opposed to an increase in intelligence. The evidence that Thompson. Schellenberg, and Husain use is a study that they conducted where they had two different groups listen to two different pieces of contrasting styles and a group who listened to

nothing. The group who listened to the more upbeat and positive piece showed improvements, whereas the other two groups showed no noticeable improvement.

This paper communicates with earlier studies indirectly. Husain is a graduate student at York University where Thompson is a professor of psychology. Schellenberg is a professor at the University of Toronto. Their authority is derived from their experience in psychology. This source is relevant as it disagrees with the “Mozart Effect” and provides a plausible alternative to why such varying results occur from different studies.