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| **Data**   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  |  |  | | --- | --- | --- | | SOUND |  |  | |  | Males |  | | Question | Right | Wrong | | 1 | 2 | 15 | | 2 | 6 | 11 | | 3 | 15 | 2 | | 4 | 7 | 10 | | 5 | 1 | 16 | | 6 | 8 | 9 | | 7 | 17 | 0 | | 8 | 13 | 5 | | 9 | 9 | 5 | | 10 | 2 | 15 | | 11 | 1 | 16 | |  | 81 | 104 | |  | 0.4378 | 0.5622 | |  |  |  | |  | Females |  | | Question | Right | Wrong | | 1 | 3 | 33 | | 2 | 11 | 25 | | 3 | 24 | 12 | | 4 | 13 | 23 | | 5 | 2 | 34 | | 6 | 14 | 22 | | 7 | 35 | 1 | | 8 | 26 | 10 | | 9 | 22 | 14 | | 10 | 4 | 32 | | 11 | 1 | 35 | |  | 155 | 241 | |  | 0.3914 | 0.6086 | |  |  |  | |  | Together |  | | Question | Right | Wrong | | 1 | 5 | 48 | | 2 | 17 | 36 | | 3 | 39 | 14 | | 4 | 20 | 33 | | 5 | 3 | 50 | | 6 | 22 | 31 | | 7 | 52 | 1 | | 8 | 39 | 14 | | 9 | 31 | 22 | | 10 | 6 | 47 | | 11 | 2 | 51 | |  | 236 | 345 | |  | 0.4062 | 0.5938 | | |  |  |  | | --- | --- | --- | | No Sound |  |  | |  | Male |  | | Question | Right | Wrong | | 1 | 5 | 51 | | 2 | 13 | 43 | | 3 | 47 | 8 | | 4 | 24 | 34 | | 5 | 3 | 53 | | 6 | 25 | 30 | | 7 | 49 | 7 | | 8 | 44 | 12 | | 9 | 25 | 31 | | 10 | 9 | 47 | | 11 | 9 | 47 | | Total | 253 | 363 | |  | 0.4107 | 0.5893 | |  |  |  | |  | Female |  | | Question | Right | Wrong | | 1 | 9 | 44 | | 2 | 15 | 38 | | 3 | 47 | 6 | | 4 | 20 | 33 | | 5 | 3 | 50 | | 6 | 34 | 19 | | 7 | 49 | 4 | | 8 | 44 | 9 | | 9 | 26 | 27 | | 10 | 9 | 44 | | 11 | 6 | 47 | |  | 262 | 321 | |  | 0.4494 | 0.5506 | |  |  |  | |  | Together |  | | Question | Right | Wrong | | 1 | 14 | 95 | | 2 | 28 | 81 | | 3 | 94 | 15 | | 4 | 44 | 65 | | 5 | 6 | 103 | | 6 | 59 | 50 | | 7 | 98 | 11 | | 8 | 88 | 21 | | 9 | 51 | 58 | | 10 | 18 | 91 | | 11 | 15 | 94 | |  | 515 | 684 | |  | 0.4295 | 0.5705 | |   **Statistical Analysis**  From the tables in the "Data" section, we can clearly see the percentage of questions answered correctly following the video with no sound was 42.95%. The percent of questions answered correctly following the video with sound was 40.62%. The success percentage is greater from the video with no sound, but is it significantly larger? To determine this, we took our data and put it to the test. We put it to the "Two-Sample Proportions Z-Test" to be exact.  **The Two-Sample Proportions Z-Test:**  The data supports all requirements for using the "Two-Sample Proportions Z-Test".  (n1p > 5; n2p > 5; n1(1-p) > 5; n2(1-p) > 5; population >10n)  Alpha-level = 0.05  Ho: p1 = p2; The proportion of correctly answered questions is the same from the data sets of both videos.  Ha: p1 < p2; The proportion of correctly answered questions from the data set of the video with background music is less than the proportion of correctly answered questions from the data set of the video without background music.  x1 = 236; n1 = 581; p1 = .4062; x2 = 515; n2 = 1199; p2 = .4295; p = (751/1780) = .4219  z = \_\_\_\_\_\_\_\_\_\_\_\_.4062 - .4295\_\_\_\_\_\_\_\_\_\_\_\_  square root [(.4219)(.5781)(1/581 + 1/1199)  z = -.93447  P = .175  Fail to reject the null hypothesis that the proportion of correctly answered questions is the same from the data sets of both videos. This sample would occur approximately 17.5% of the time. This is not statistically significant in accordance with the predetermined significance level of 0.05. Basically, the sets of data do not significantly show a difference between the proportions of correctly answered questions.  [**Graphs**](http://docs.google.com/graphs.html)  [[Home](http://docs.google.com/home.html)][[Introduction](http://docs.google.com/introduction.html)][[Hypothesis](http://docs.google.com/hypothesis.html)][[Procedure](http://docs.google.com/procedure.html)][[Data/Statistical Analysis](http://docs.google.com/data.html)][[Conclusions](http://docs.google.com/conclusions.html)][[Biblio/Links](http://docs.google.com/biblio.html)]  [[2001 Projects](http://docs.google.com/index.html)][[2000 Projects](http://docs.google.com/AP2000/index.html)][[1999 Projects](http://docs.google.com/AP99/index.html)][[1998 Projects](http://docs.google.com/AP98/index.html)] |