III. Results and Discussion + Graphic

To evaluate the difference in the proportion of AI-generated media correctly identified across the image and audio treatments, I compared the means and standard deviations of these groups. The distribution of proportion of AI-generated media for the image and audio groups is shown below in Figure 1. The blue boxplot represents the distribution for the audio clips, while the yellow boxplot represents the distribution for the images.

Figure 1: Distribution of Proportion of AI-Generated Media Correctly Identified for Image and Audio Treatments.

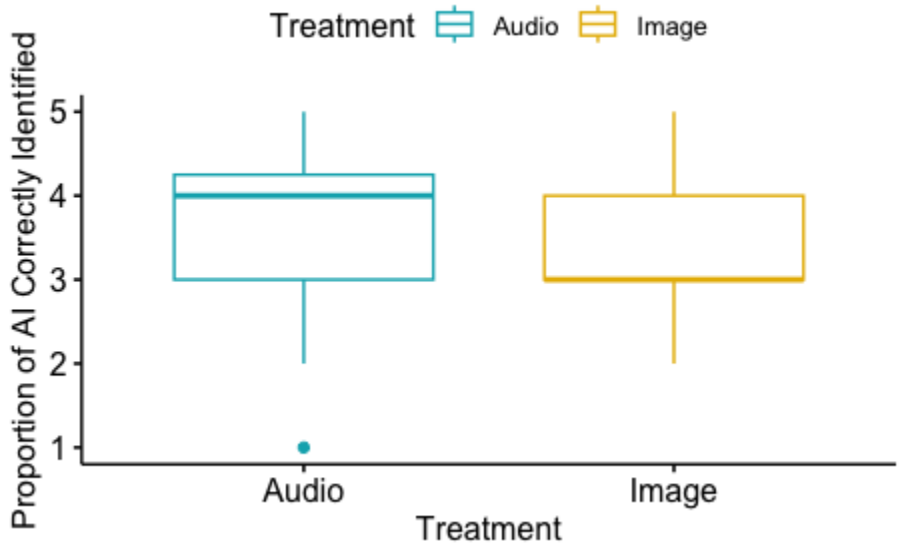

Figure 2: Means and Standard Deviations of the Number of Correct Responses for Audio and Image Treatment Groups.

Treatment	Mean (Correct Responses)	Standard Deviation	N
Audio	3.71	1.12	24
Image	3.22	0.87	32

From Figure 1, we can see that the audio treatment has a higher mean proportion of media identified correctly compared to the image treatment; both groups appear to have similar sampling variability. Figure 2 supports these findings from the boxplot, since the

mean proportion of AI-generated media identified correctly for the audio group was 3.71 out of 5, compared to a mean proportion of 3.22 for the image group. The audio group also has a slightly higher standard deviation of 1.12, which could be attributed to this sample being smaller, at 24 students compared to 32 students who were assigned to the image group. The sample size for both treatments was expected to be different because participants spinned a wheel to determine whether they would view images or listen to audio clips; variability between spins is inevitable with a sample of just 56 students overall.

Due to this difference in sample sizes between the audio and image groups, I first checked if I could assume equal variances of both samples. I ran Fisher's t-test to compare variances, with the null hypothesis being that the true ratio of variances are equal to 1, and the alternative hypothesis being that the true ratio of variances are not equal to 1. With an f-ratio of 1.66 and a p-value of 0.18 > 0.05, we can assume that the ratio of variances are equal.

I then ran an unpaired t-test as shown in Figure 3, assuming equal variance, to determine if there is a difference in the mean proportions between the audio and image treatments. I obtained a p-value of 0.07, which indicates that if there is no difference in the mean proportion of AI-generated media correctly identified between both groups, the likelihood of obtaining my sample results, or more extreme results, is just 7%. This gives us some evidence to reject the notion that there is no difference in mean proportions, if the significance level is 0.10. However, given that the p-value isn't very small (less than 0.05), we do not have very strong evidence against the null hypothesis.

Figure 3: Two Sample t-Test Comparing the Distributions of Proportion of AI-Generated Media Identified Correctly for the Audio and Image Groups

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        Two Sample t-test

data:  correct_audio and correct_image
t = 1.8401, df = 54, p-value = 0.07126
alternative hypothesis: true difference in means is not equal
to 0
95 percent confidence interval:
 -0.04385301  1.02301968
sample estimates:
mean of x mean of y
 3.708333  3.218750
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The results of this study can be generalized to all full-time Cal Poly students, but these findings cannot apply to students or other people outside of Cal Poly because the proportion of media correctly identified may differ based on education level, awareness of AI, and age.