Data Analysis and Statistical Inference
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In-Video Quiz Questions for
Unit 1: Part 1 – (4) Experimental design

(02:03)

1. A study is designed to test the effect of light level and noise level on exam performance of students. The researcher also believes that light and noise levels might have different effects on males and females, so wants to make sure both genders are represented equally under different conditions. Which of the below is correct?

(a) There are 3 explanatory variables (light, noise, gender) and 1 response variable (exam performance)
(b) There is 1 explanatory variable (gender) and 3 response variables (light, noise, exam performance)
(c) There are 2 blocking variables (light and noise), 1 explanatory variable (gender), and 1 response variable (exam performance)
(d) There are 2 explanatory variables (light and noise), 1 blocking variable (gender), and 1 response variable (exam performance)

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Answers:

1. d

Explanation: The researchers are interested in the effect of light and noise on exam performance. Since they believe these two variables might be affecting the outcome, these are the explanatory variables and exam performance is the response variable. Gender of the student is a nuisance variable they want to control for, hence they block for it. Unlike light and noise, gender is not a treatment that is being imposed on the subjects.