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Mathematical Analysis: Statistical Study

Teacher Name: Ms. Low

Student Name: ~~XXXXXXXXXX~~

CATEGORY	10-8	7-5	4-2	1-0
(10) Characteristics of a Good Experiment CSR (10%)	Activity is completed by items are circled that are not aspects of a good experiment by personal opinion.			No items are circled/ activity sheet has no evidence of completed work.
(7) Analysis of Study Activity (20%) What about the design? Do it convince you that the results are valid?	Activity is fully completed by chart is marked, 3 responses to why or why not the characteristic is a part of the study, and final analysis of experimental design is included.	Activity is mostly completed by 2 of the 3 requirements (chart is marked, 3 responses to why or why not the characteristic is a part of the study, and final analysis of experimental design is included) are completed.	Activity is partially completed by 1 of the 3 requirements (chart is marked, 3 responses to why or why not the characteristic is a part of the study, and final analysis of experimental design is included) are completed.	None of the activity requirements (chart is marked, 3 responses to why or why not the characteristic is a part of the study, and final analysis of experimental design is included) are completed.
(10) Content of Final Response Draft (30%) Love the detailed explanation	Detailed first draft of response to statistical study is presented and includes all required information (1-2 sentence summary, 1-2 sentences per criteria on how the study meets or does not meet the criteria and why, and 1-2 sentence response on overall design of experiment).	First draft of response to statistical study is presented and includes most of required information.	First draft of response to statistical study is written and is missing most of required information.	No response to statistical study is written or all of the required information is missing.
(10) Study Analysis (30%) Nice conclusions!	Overall response is meaningful and clearly utilizes analytical reasoning.	Overall response is adequate and uses reasoning.	Overall response is vague and has little supported reasoning.	Overall response is missing and has no reasoning.
(10) Peer Edit (10%) Thoughtful Suggestions! 😊	Peer edit is fully completed by having 3 of the 3 requirements: checking the required aspects of the response, a thoughtful compliment is written and a thoughtful suggestion or question is written.	Peer edit is mostly completed by having 2 of the 3 requirements.	Peer edit is partially completed by having 1 of the 3 requirements.	None of the peer edit requirements were met.

Random Thought:

Do you think that just because a study meets the design characteristics, that it actually proves anything? Sounds like from your experiment/study, it proves NO! 😊

Characteristics of a Well Designed Experiment

Does this study have the characteristics of a well designed experiment to produce results that could have statistical significance?

Characteristic	Is this a characteristic of the study?	
	YES	NO
1. Random assignment	YES X	NO
2. Sufficient number of subjects	X	
3. Comparison group or control group	X	

Why is this or is this not a characteristic of the study?

This is because they used a sufficient # of subjects. They used 2000 kids.

They compared whether pop/soda made you violent or not.

They randomly assigned into 2 groups

Does the design of the experiment provide convincing evidence that one treatment causes a different response than another treatment? Why or why not?

Well I don't really think so because some people drink soda all the time & they aren't violent or carry around a gun or weapon! They just

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Characteristics of a Good Experiment

Draw circles around characteristics that are NOT aspects of a good experiment.

✓ Comparison group or control group

✓ Confounding variables

✓ Treatments are assigned randomly to all the subjects

The control group only receives random assignment

Only one group is used

✓ Sufficient number of subjects

close
Small number of subjects

No comparison group or control group

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(10) Characteristics of a Good Experiment CSR (10%)	Activity is completed by items are circled that are not aspects of a good experiment by personal opinion.			No items are circled/ activity sheet has no evidence of completed work.
(10) Analysis of Study Activity (20%)	Activity is fully completed by chart is marked, 3 responses to why or why not the characteristic is a part of the study, and <u>final analysis of experimental design is included.</u> ↓ nice!	Activity is mostly completed by 2 of the 3 requirements (chart is marked, 3 responses to why or why not the characteristic is a part of the study, and final analysis of experimental design is included) are completed.	Activity is partially completed by 1 of the 3 requirements (chart is marked, 3 responses to why or why not the characteristic is a part of the study, and final analysis of experimental design is included) are completed.	None of the activity requirements (chart is marked, 3 responses to why or why not the characteristic is a part of the study, and final analysis of experimental design is included) are completed.
(8) Content of Final Response Draft (30%) - Does the design of the experiment make the results valid? - Great detail	<u>Detailed first draft of response to statistical study is presented and includes all required information (1-2 sentence summary, 1-2 sentences per criteria on how the study meets or does not meet the criteria and why, and 1-2 sentence response on overall design of experiment).</u>	First draft of response to statistical study is presented and includes <u>most of required information.</u>	First draft of response to statistical study is written and is missing most of required information.	No response to statistical study is written or all of the required information is missing.
(4) Study Analysis (30%) Just include what you determined on the validity in your paragraph (based on design)	Overall response is meaningful and clearly utilizes analytical reasoning.	Overall response is adequate and uses reasoning.	Overall response is vague and has little supported reasoning.	Overall response is missing and has no reasoning.
(10) Peer Edit (10%)	Peer edit is fully completed by having 3 of the 3 requirements: checking the required aspects of the response, a thoughtful compliment is written and a thoughtful suggestion or question is written.	Peer edit is mostly completed by having 2 of the 3 requirements.	Peer edit is partially completed by having 1 of the 3 requirements.	None of the peer edit requirements were met.

Comments

Random assignment is defin. tely hard to do here, so sometimes it is alright to not have all the characteristics?
Careful on assuming enough subjects were used...

Characteristics of a Well Designed Experiment

Does this study have the characteristics of a well designed experiment to produce results that could have statistical significance?

Characteristic	Is this a characteristic of the study?	
	YES	NO
1. Random assignment		X
2. Sufficient number of subjects	X	
3. Comparison group or control group	X	

Why is this or is this not a characteristic of the study?

- The test couldn't be randomly assigned to the subjects because it was a comparison between the same test on two different kinds of beds.
- There was a sufficient number of subjects to test the difference between the beds.
- There was a control group (the normal beds) to compare to the sleepnumber beds.

Does the design of the experiment provide convincing evidence that one treatment causes a different response than another treatment? Why or why not?

- Yes, because a duration of 20 years and a sufficient number of subjects with a comparison group shows that one bed is better than the other. There is good evidence even if the treatment couldn't be assigned randomly.

Five Ways We Prove You'll Sleep Better On A Sleep Number® Bed

1. Significant sleep improvement on the Sleep Number® bed

In research conducted at Stanford and Duke Universities, subjects fell asleep faster and spent less time awake in the Sleep Number® bed. In an exciting new study by Harvard researchers, conducted at Massachusetts General Hospital, participants experienced significantly improved sleep quality after switching to a different bed. That bed was the Sleep Number® bed.

2. Research reveals more deep, restorative sleep

It's widely known that achieving REM sleep is important to your physical and mental well-being. Independent clinical research shows that 87% of those who slept on a Sleep Number bed experienced more REM sleep with fewer sleep disturbances.

3. Studies show improved energy and well-being

After sleeping on a Sleep Number bed for just 90 days, owners reported 26% fewer visits to the doctor for back or neck pain. In clinical research, 77% of participants reported increased energy and 67% indicated reduced daytime sleepiness.

4. Clinical results prove back-pain relief

In clinical studies, an amazing 93% of participants who slept on a Sleep Number bed reported back-pain relief reduced. Fewer back and neck aches, and a significant decrease in soreness, stiffness and pain were experienced. NEW Harvard researchers' study at Massachusetts General Hospital.

5. Testing shows 20 years of durability

In product abuse tests simulating 20 years of wear, the Sleep Number bed proved more than twice as durable.

[Shop for Your Sleep Number Bed](#)

[Read the 5 Reasons You'll Sleep Better On a Sleep Number Bed](#)

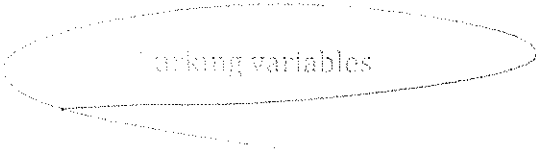
Group Paper

Characteristics of a Good Experiment

Draw circles around characteristics that are NOT aspects of a good experiment.



Comparison group or control group



Working variables



Treatments are assigned randomly to all the subjects

The control group only receives random assignment



Only one group is used



Sufficient number of subjects



close

equal number of subjects

No comparison group or control group