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Variables in Research Research Core-Science

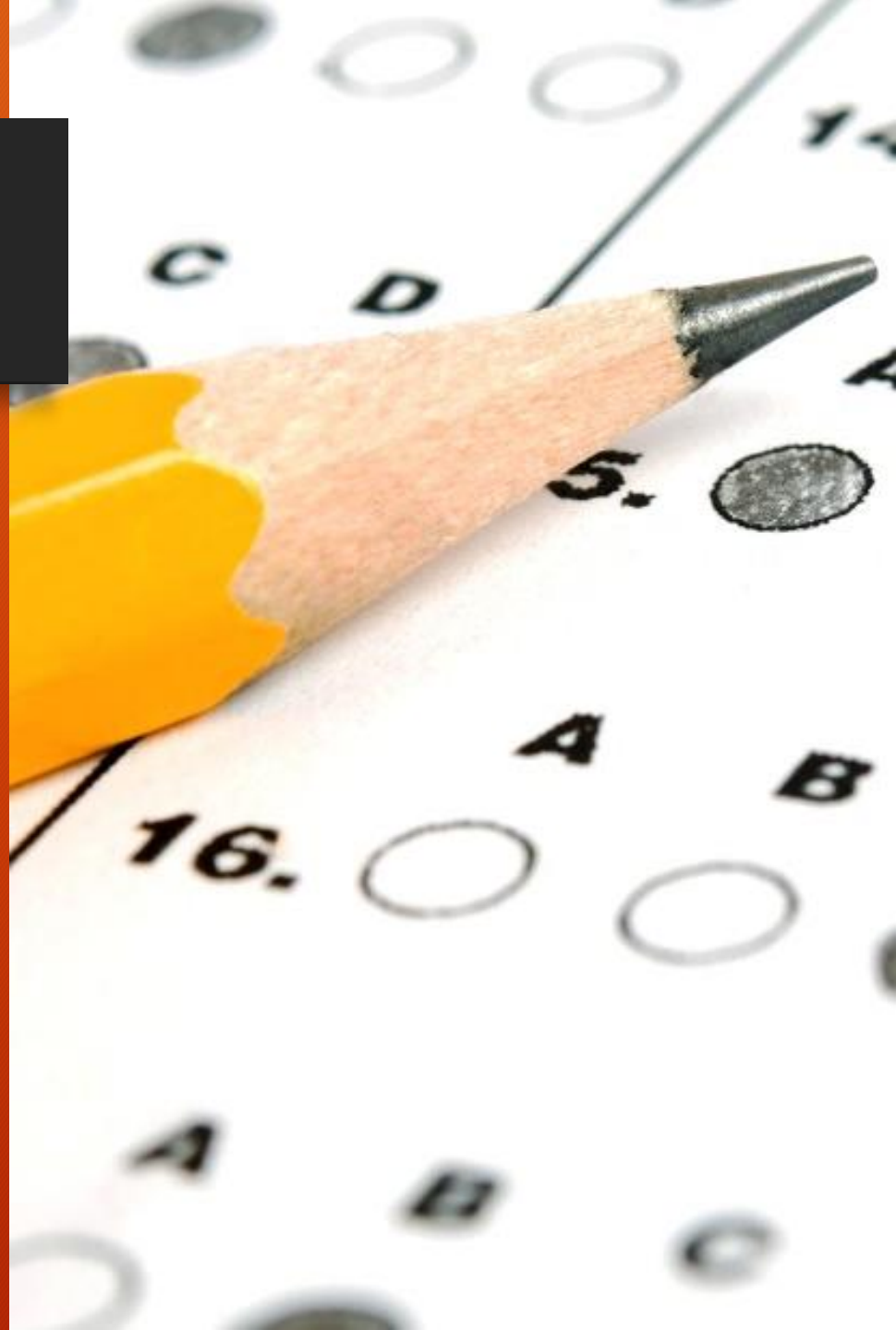
Types of Variables

- A collection of the same information from most if not all participants in a study
- A variable contains only one piece of information, but this information is collected from most if not everyone who is participating in the study



Wardisiani's Research 😊

- Variables regarding ethnicity were coded into eight variables: White, Black, Hispanic, Asian, Native Hawaiian or Pacific Islander, American Indian, and one or more race.
- The categorical variables of gender, year of study, and group membership were coded as follows:
- Group (0) control | (1) experimental
- Moreover, the continuous variables with a 'Gr' prefix (e.g., GrRdg and Wrt, GrMath) refers to growth in those sections of the SAT; growth scores were computed for each participant's performance on the two sub-scores of the SAT (reading/English and math) by calculating the difference between the initial practice testing at the beginning of the school year and the actual performance on the SAT in the spring.



Independent Variables

- The predicting variable that explains the variation of SAT scores (Wardisiani's Research Example).
- So, variables in your research that are constant and *not subject to change* are Independent Variables.



Dependent Variables



- The dependent variable is the outcome, or the surprise variable - What do we want to find out in the study?
- #1) How does gender effect Self Esteem in High School Students?
- #2) The Effect of an SAT Intervention Program on Student Performance in a Suburban Chicagoland High School.

Continued

- Independent and Dependent are unique for each study, so the same variable can be a dependent variable in one study and an independent variable in another study - it depends on the formation of the **RESEARCH QUESTION!**



Control Variables

- Control variables are not directly related to the focus of the study, but a crucial for understanding the relationship between the variables and our focus.
- Control variables help to minimize bias and provide more accurate findings.
- Control variables are as important as the independent and independent variable.



Confounding and Disturbance Variables



- Confounding or intervening variables influence the independent variable in such a way that the results from the dependent variable become untrustworthy.

- Facebook Participation and Socialization
 - Using Facebook to meet people socially
 - Marriage status
 - Location
 - Access to transportation

Disturbance Variables

- Disturbance Variables usually lurk in the background and they can disturb the findings of our dependent variables.
- Common characteristics of participants that are misleading the findings of our study without awareness.



Moderators and Mediators

- Moderators are variables that can strengthen or weaken an already established relationship between the independent and dependent variables.
- Example: The Relationship between alcohol consumption and liver damage.
- What is the dependent variable?
Independent Variable?
- *Is the relationship stronger in women than men!*



Mediators

- Mediators are intervening variables that interfere with the relationship between main variables.
- Example: The relationship between study times of students and grades.
- Does the amount of time studying directly improve grades? The course? Individual Study habits?





Thank You
Questions and Comments