Instrumentation

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INSTRUMENTATION

- **Instrument is the generic term that researchers use for a measurement device (checklist, test, questionnaire).**

- **Instrumentation is the course of action (the process of developing, testing, and using the device).**

INSTRUMENT

researcher-completed

subject-completed

INSTRUMENT

Researcher-completed Instruments	Subject-completed Instruments
Rating scales	Questionnaires
Interview schedules/guides	Self-checklists
Tally sheets	Attitude scales
Flowcharts	Personality inventories
Performance checklists	Achievement/aptitude tests
Time-and-motion logs	Projective devices
Observation forms	Sociometric devices

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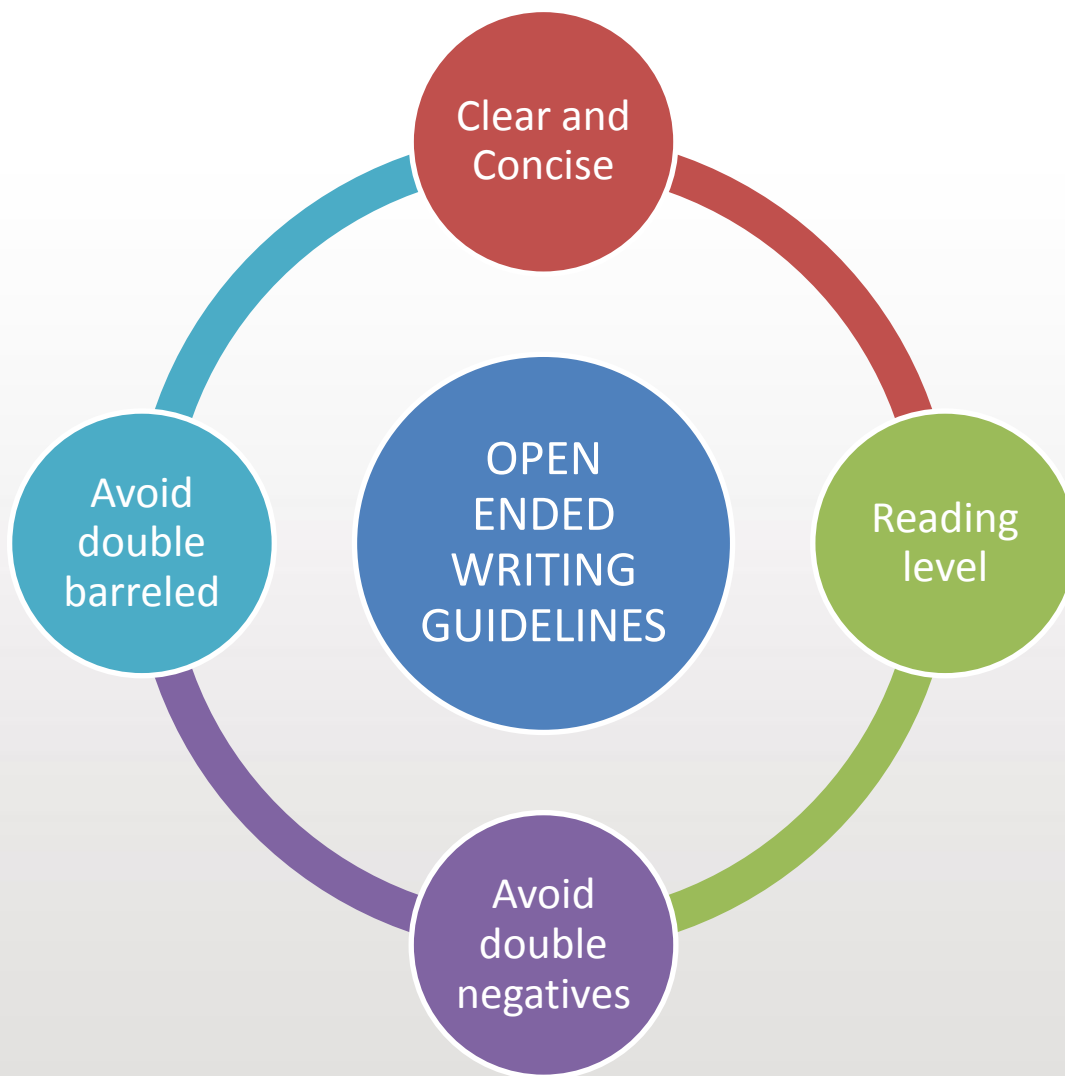# INSTRUMENT

Open ended

Basic Questions

Closed-ended

OPEN ENDED QUESTIONS

- **Open ended questions** :- when there are a great number of possible answers or researchers cannot predict all the possible answers

Clear and Concise

Reading level

OPEN ENDED WRITING GUIDELINES

Avoid double barreled

Avoid double negatives

OPEN ENDED QUESTIONS

- Open-ended questions are useful to **explore a topic in depth** however,

  open-ended questions are difficult to

  (i) Respond and (ii) Analyze.

- Therefore, **limit** the number of open-ended questions to the needed minimum.

CLOSED ENDED QUESTIONS

- **Closed ended questions**:- all the possible, relevant responses to a question can be specified and the number of possible responses is limited

- **Example- gender, ethnic, educational level**

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CLOSED ENDED QUESTIONS
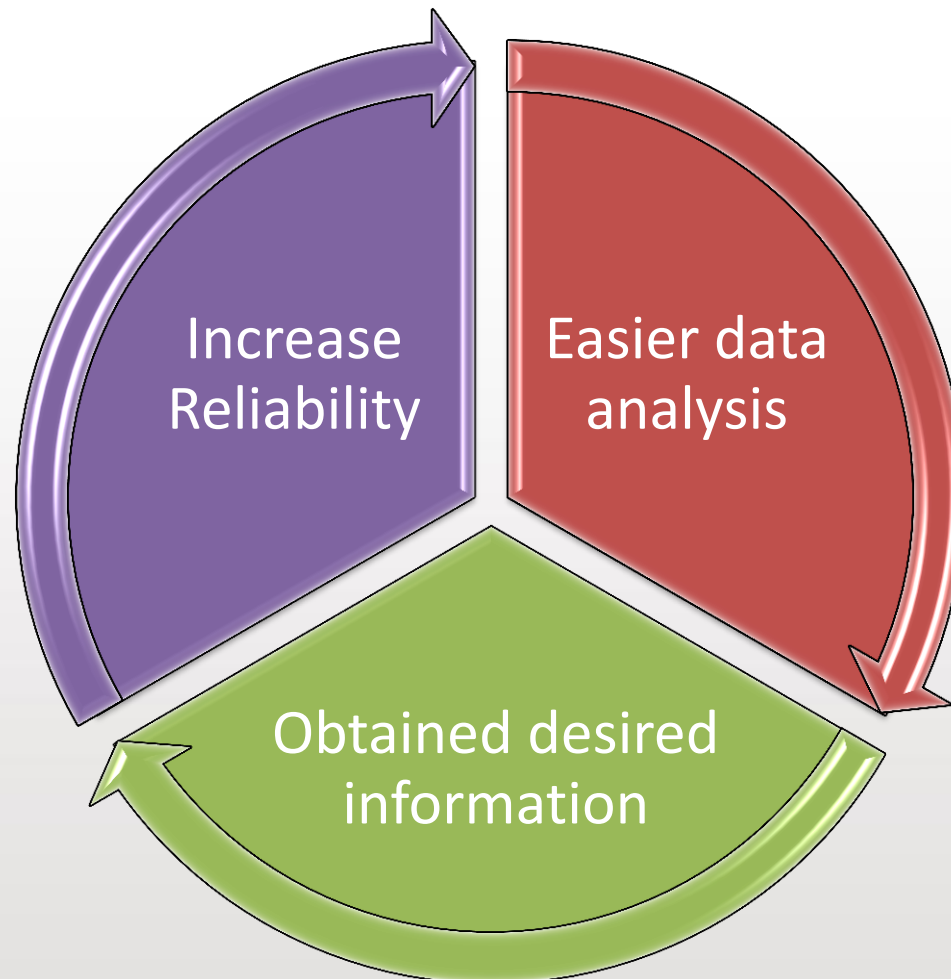
- Make sure that your answer categories are mutually exclusive.

- Example: What is your age group?

a) Less than 20 years
b) 20-30 years
c) 31-40 years
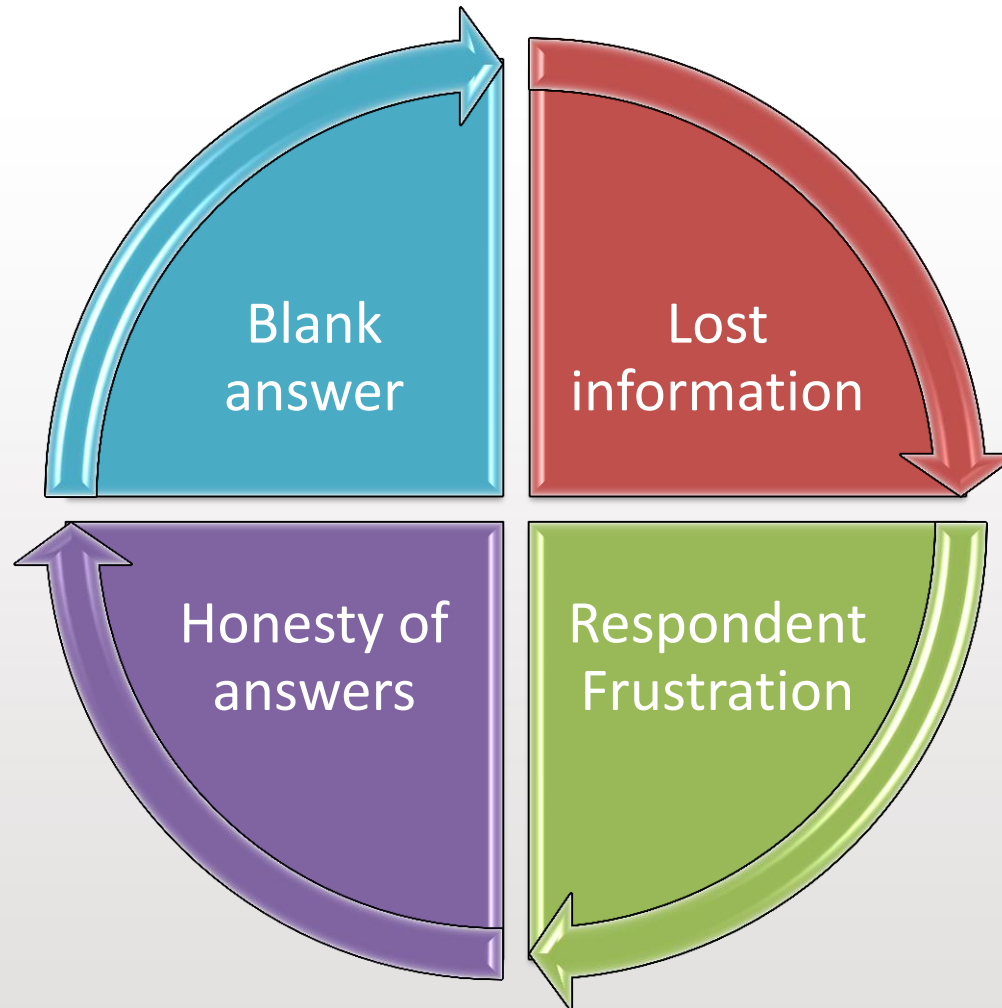d) 41-50 years
e) Above 50 years

CLOSED ENDED QUESTIONS

1. **Are you a male or female?***(fixed alternative)*

2. **Are you a smoker?** *('yes' or 'no' answer)*

3. **Please indicate your annual income level for the previous year:**
    a) **RM 0.00 to RM10,000.00**
    b) **RM10,000.01 to RM 35,000.00**
    c) **RM 35,000.01 and above**

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ADVANTAGES

Increase Reliability

Easier data analysis

Obtained desired information

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DISADVANTAGES

Blank answer

Lost information

Honesty of answers

Respondent Frustration

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INSTRUMENT

Both formats can be used in the same question.

1. What type of writing assignment do you typically require in your course?

a. Reports

b. Themes or essays

c. Research papers

d. Take home test

e. Other (Please specify) _____

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STRUCTURE OF QUESTIONS

1. **Completion, or fill in.**

Example – What is the major weakness you have observed in your students preparation for college?

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STRUCTURE OF QUESTIONS

2. Checklists

Example ; What type of teaching aids do you use in your class? Check as many as apply

1) Chalkboard
2) Overhead projector
3) Computer projector
4) Video tapes
5) Other (please specify)_____

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STRUCTURE OF QUESTIONS

3. Scaled Items

Example : How would you rate the writing skills of students you are teaching this semester? (check one)

1. Very poor
2. Less than adequate
3. Adequate
4. More than adequate
5. Excellent
6. Insufficient information

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STRUCTURE OF QUESTIONS

4. Ranking Items

Example: **Do your students have more difficulty with some types of reading than with other types? Please rank the order of difficulty of the following materials with 1 the most difficult and 4 the least difficult**

_____1) Textbooks

_____2) Other reference books

_____3) Journal articles

_____4) other (Please specify)_____

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STRUCTURE OF QUESTIONS

5. Likert Scales

Example : The students who typically enroll in my course are underprepared in basic math skills. (Circle one)

1. **Strongly Disagree**
2. **Disagree**
3. **Undecided**
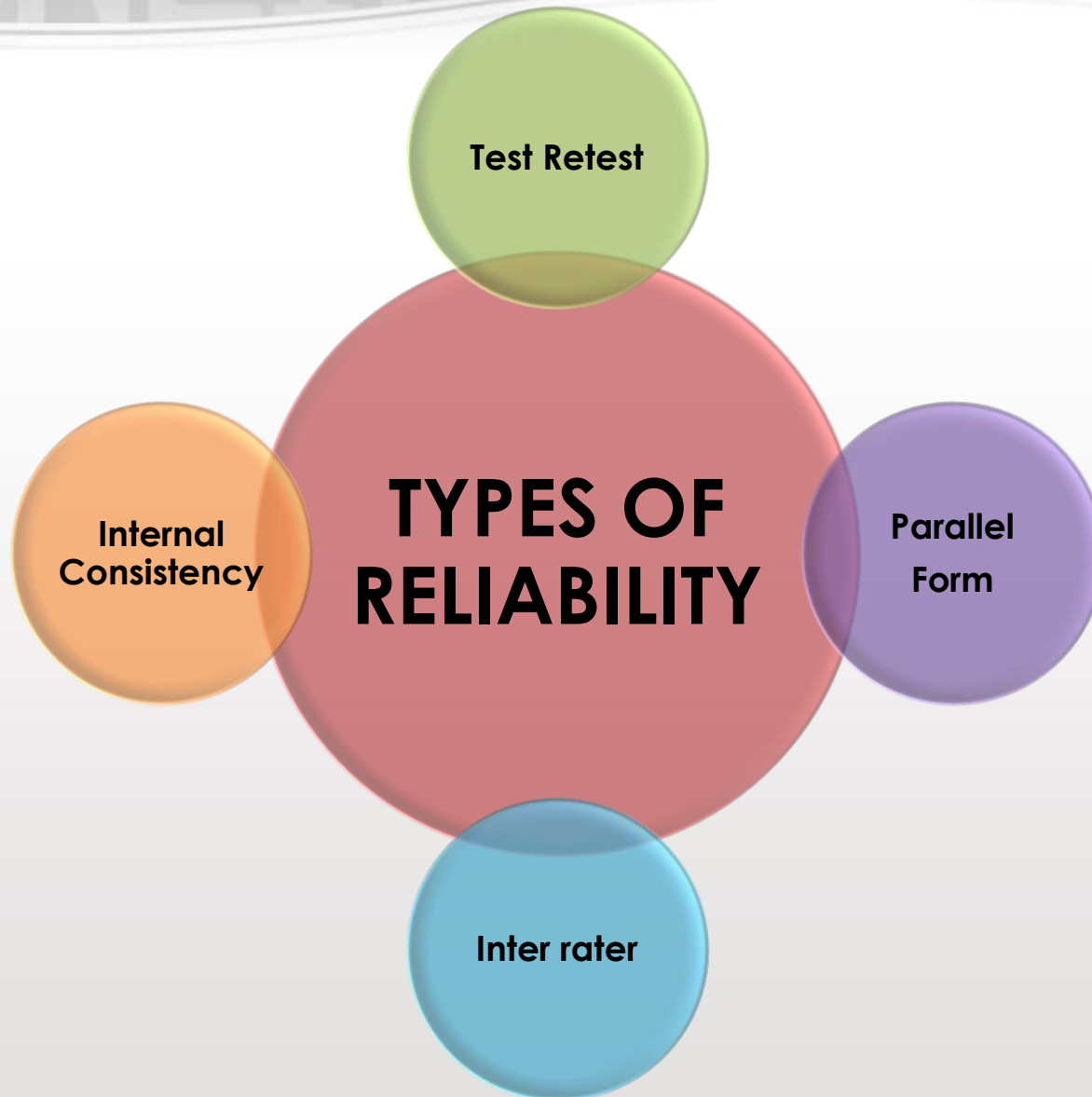4. **Agree**
5. **Strongly Agree**

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VALIDITY

- **How well test measure what it is designed to measure**

- **The process of validation involves accumulating evidence to provide scientific basis for the proposed score interpretations**

CONTENT

PREDICTIVE

Types of validity

CONSTRUCT

CONCURRENT

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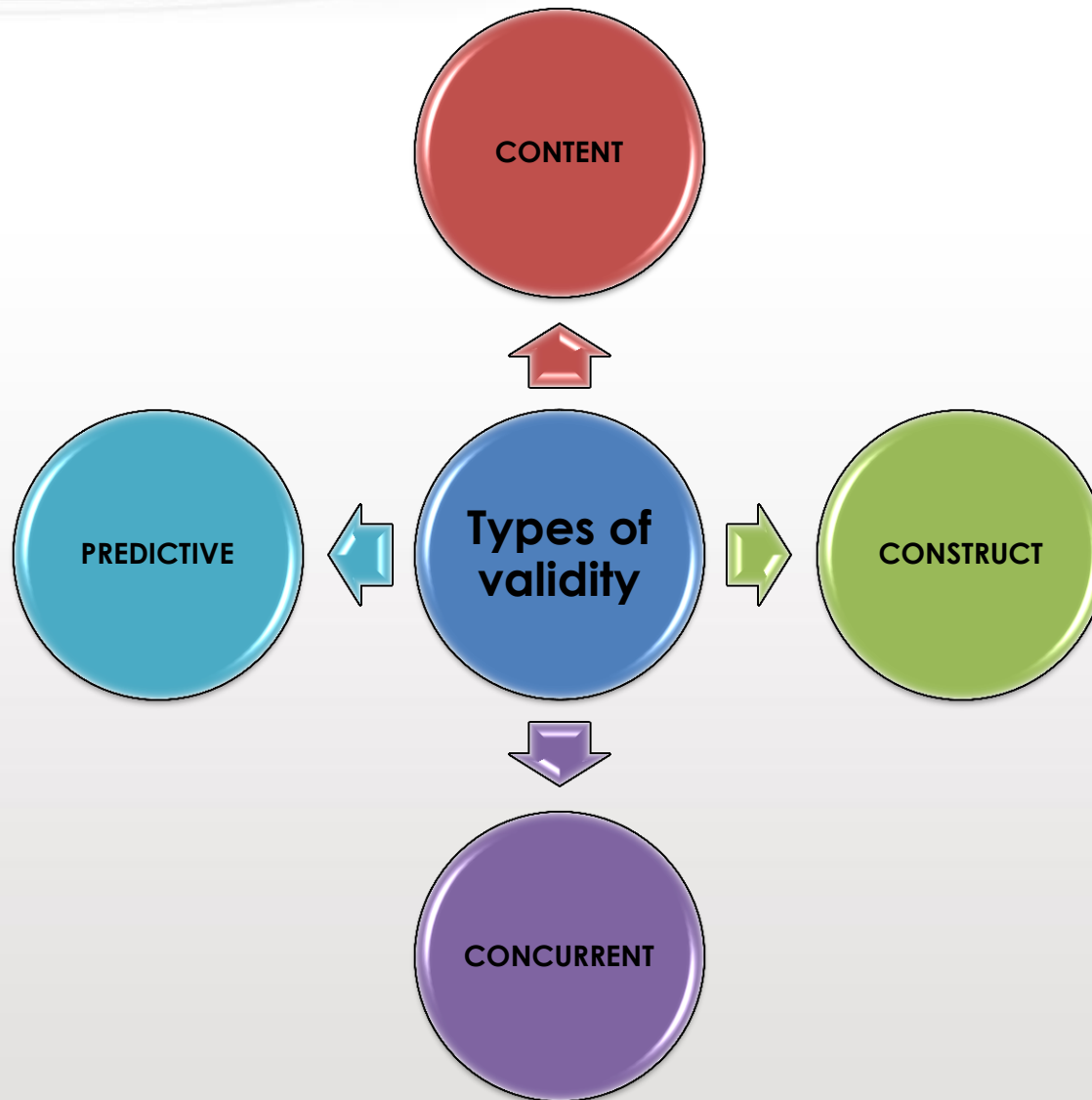
RELIABILITY

- **Refers to the consistency of a measure**

- **For example, if a test is designed to measure a trait (such as creativity), then each time the test is administered to a subject, the results should be approximately the same.**

TYPES OF RELIABILITY

- Test Retest
- Parallel Form
- Inter rater
- Internal Consistency

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Thank You