

Unit 10 - Week 7: Empirical Research Methods

Course outline

How does an NPTEL online course work?

Week 0: Assignment on Prerequisites

Week 1: Introduction

Week 2: Engineering User-Centric Systems

Week 3: User-Centric Computing

Week 4: Computational user models (classical)

Week 5: M5-Computational user models (contemporary)

Week 6: Formal system models

Week 7: Empirical Research Methods

● Lec 26: Introduction and research question formulation

● Lec 27: Variables determination and experiment design

● Lec 28: Data analysis including model building

○ Quiz : Assignment 7

○ Weekly feedback form for week 7

○ Solution: Assignment 7

Week 8: User-Centric Design Evaluation

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Assignment 7

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2020-03-18, 23:59 IST.

1) Rearrange the following 5 steps of an empirical research in the proper sequence. 1 point

- I. Design of experiment
- II. Building of a model
- III. Analysis of empirical data
- IV. Identification of research question(s)
- V. Determination of variables

- I, IV, II, III, V
 IV, V, I, III, II
 I, IV, III, II, V
 II, IV, I, III, V

No, the answer is incorrect.

Score: 0

Accepted Answers:

IV, V, I, III, II

2) In a study involving observation-based data collection, the data obtained is known as _____. 1 point

- experience data
 empirical data
 inspection data
 aleatory data

No, the answer is incorrect.

Score: 0

Accepted Answers:

empirical data

3) An informal and unstructured small-scale study conducted to prepare for a full-scale study is known as _____. 1 point

- preliminary inquiry
 prelude study
 pilot study
 groundwork study

No, the answer is incorrect.

Score: 0

Accepted Answers:

pilot study

4) "How my interface looks like?" is a good example of research question. 1 point

- True
 False

No, the answer is incorrect.

Score: 0

Accepted Answers:

False

5) Match the following 1 point

- | | |
|---------------|--|
| I. Nominal | A. 1=Male, 2=Female |
| II. Ordinal | B. Temperature in °C (98°C, 99°C, 100°C ...) |
| III. Interval | C. WPM (word per minute) |
| IV. Ratio | D. Rank (1st, 2nd, 3rd, ...) |

- I – B, II – C, III – D, IV – A
 I – A, II – D, III – B, IV – C
 I – C, II – D, III – A, IV – B
 I – D, II – A, III – B, IV – C

No, the answer is incorrect.

Score: 0

Accepted Answers:

I – A, II – D, III – B, IV – C

6) Generally five participants are sufficient for conducting a pilot study, whereas the number lies between _____ for a controlled empirical study. 1 point

- 10 and 30
 100 and 300
 12 and 25
 50 and 100

No, the answer is incorrect.

Score: 0

Accepted Answers:

12 and 25

7) A participant's performance is influenced by his experience of a repetitive task. This phenomenon is known as _____. 1 point

- practical learning
 temporal learning
 proficiency effect
 practice effect

No, the answer is incorrect.

Score: 0

Accepted Answers:

practice effect

8) t-test is a _____. 1 point

- parametric test
 non-parametric test

No, the answer is incorrect.

Score: 0

Accepted Answers:

parametric test

9) Suppose these are 100 tasks in an empirical study, and 50 participants. You ask the first 25 participants for completing the first 50 tasks, and rest of the participants for completing the next 50 tasks. 1 point

- This is "within-subject" experiment
 This is "between-subject" experiment
 This type of experiment can be termed as both the "within-subject" and the "between-subject" experiments
 None of the above

No, the answer is incorrect.

Score: 0

Accepted Answers:

This is "between-subject" experiment

10) Statistical significance test are required _____. 1 point

- to verify whether the participants are statistically significant or not
 to verify whether the data occurred by chance or due to specially designed test conditions
 to verify the null hypothesis
 to verify the alternative hypothesis

No, the answer is incorrect.

Score: 0

Accepted Answers:

to verify whether the data occurred by chance or due to specially designed test conditions