Inclusive Teaching:

Offering a tailored approach in supporting students' learning in Maths 26 March at Lancaster University

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London South Bank University

Inclusive Teaching: Tailored Support

Embedded classes

• Numeracy for Nursing students

- Anxiety towards Maths
- Lack of confidence

Statistics & Data Analysis

- Anxiety towards Stats
- Substitute the nomenclature
- Problem solving skills





Inclusive Teaching: Tailored Support

Embedded classes

• Numeracy for Nursing students

- Anxiety towards Maths
- Lack of confidence
- Because of bad experiences in the past

Recent experience with mature students

- Students prepared the tasks in advance
- Blended learning Active, independent learning
- Transfer of skills





What is Quantitative Data?



Statistical problem-solving cycle

In order to carry out a research project or a statistical inquiry, often we need to complete a statistical problem-solving cycle, known as PCAI-cycle.





Example of questionnaire

What data types relate to following questions?

➤Q1: Which PG course are you studying?

NAD	NCH	NMH	NLD	NMF

>Q2: Gender:

Male Female

>Q3: I consider myself punctual in my job:

Strongly	Disagree	Not Sure	Agree	Strongly
Disagree				Agree

➤Q4: How many years of working experience do you have:

Round your answer to the nearest whole number

Example of questionnaire

What data types relate to following questions?

≻Q1	: Which PG	Nominal						
	NAD	NCH	NMH	NLD	NMF			
≻Q2	: Gender:	Binary/ Nominal						
>Q3: I consider myself punctual in my job:								
	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree			
≻Q4	Ordinal							
Round your answer to the nearest whole number								
					Scale			

Descriptive Statistics

Summary Statistics.

Methods represent a brief description of the values in the data set, in a meaningful way. They do not allow to draw conclusions, there are simply a way to describe our data.

- For example, there are 130 pieces of students' assignment, their lecturer may be interested in the overall performance of those students. She would also be interested in the distribution or spread of the marks. Descriptive statistics can help.
- Typically, there are two general types of statistic that are used to summarise data (measures of central tendency and measures of spread)





Coursework marks for 60 students (out of 65)

9	35	35	11	22	12	12	38	15	17	28	18
19	20	21	22	11	23	23	54	25	25	26	26
26	27	47	28	18	39	37	31	32	32	32	43
44	10	37	10	37	37	30	34	29	41	42	33
14	44	27	47	49	49	51	24	54	57	58	64

- Find the range
- Find the mode, median and mean.
- Calculate variance and standard deviation

Coursework marks for 60 students (are now sorted)

9	10	10	11	11	12	12	14	15	17	18	18
19	20	21	22	22	23	23	24	25	25	26	26
26	27	27	28	28	29	30	31	32	32	32	33
34	35	35	37	37	37	37	38	39	41	42	43
44	44	47	47	49	49	51	54	54	57	58	64

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34	35	35	37	37	37	37	38	39	41	42	43
44	44	47	47	49	49	51	54	54	57	58	64

- Total = 1,861
- Mean = 1,861/60 = 31.02.
- Variance = 183.216, Standard Deviation = 13.5

Coursework marks for 60 students can be summarised below

N	60	Minimum		Median		Maximum
Minimum	9	Winning	LQ	Median	UQ	Maximum
Maximum	64	9	21.5	29.5	40	64
Range	55					
Median	29.5	Box-plot D	iagram	<u>۱</u>		
Mean	31					
Lower Q	21.5					
Upper Q	40					
IQR *	18					
Variance	183					
S.D.	13.5	5 15	25	35	45	55 65

IQR = interquartile range equals the difference between UQ and LQ. https://onlinecourses.science.psu.edu/stat500/node/11/

Box and Whisker Diagrams

A box-plot is a good graphical representation of summary statistics. Box-plots can be used to compare two samples.



Data Type	Measures of central tendency	Measures of dispersion		
Nominal	Mode			
	Mode			
Ordinal	Median	Quartiles, IQR		
	Mode	Range		
Scale	Median	Quartiles, IQR		
	Mean	Standard Deviation		