



UNIVERSITAS MUHAMMADIYAH PROF. DR. HAMKA
FAKULTAS KEGURUAN DAN ILMU PENDIDIKAN

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SURAT TUGAS

Nomor : 1029/ FKIP/ PTK/ 2026

Pimpinan Fakultas Keguruan dan Ilmu Pendidikan Universitas Muhammadiyah Prof. DR. HAMKA, memberi tugas kepada:

Nama : **Bitu Dwi Rahmani, Ph.D.**
NIDN : 0328078301
Pangkat dan golongan : Penata Tingkat 1, III-D
Jabatan : Dosen Fakultas Keguruan dan Ilmu Pendidikan
Untuk : Menjadi Peserta Pengembangan RPS dan Modul Ajar semester Genap Tahun Akademik 2025/2026 pada Tanggal 6 Februari 2026 di FKIP UHAMKA

Demikian tugas ini diberikan untuk dilaksanakan dengan sebaik-baiknya sebagai amanah dan ibadah kepada Allah Subhanahu wa Ta'ala. Setelah melaksanakan tugas agar memberikan laporan kepada pemberi tugas.

Jakarta, 1 Februari 2026

Dekan,



Purroha Syae Purrohman, M.Pd., Ph.D.

	UNIVERSITAS MUHAMMADIYAH PROF. DR. HAMKA FAKULTAS KEGURUAN DAN ILMU PENDIDIKAN PROGRAM STUDI PENDIDIKAN BAHASA INGGRIS					Kode Dokumen
RENCANA PEMBELAJARAN SEMESTER						
MATA KULIAH (MK)	KODE	Rumpun MK	BOBOT (3 sks)		Semester	Tgl Penyusunan
Statistics for ELT Research	501044		T= 2	P= 1	4	28/2/2026
OTORISASI	Pengembang RPS	Koordinator RMK	Ketua Program Studi			
	Bitu Dwi Rahmani, Ph.D.	Prof.Herri Mulyono, Ph.D.	Silih Warni, Ph.D.			
Capaian Pembelajaran (CP)	CPL-PRODI yang dibebankan pada MK					
	CPL 1	Lulusan mampu menunjukkan kepribadian yang berakhlak dan berintegritas melalui proses pembelajaran yang menghargai kebhinekaan Indonesia dan nilai-nilai profetik.				
	CPL 2	Lulusan mampu menunjukkan keterampilan menggunakan konsep, teori, dan metode secara logis, kritis, sistematis, dan inovatif melalui proses pembelajaran yang menekankan etika akademis ilmiah.				
	CPL 6	Lulusan mampu menguasai prinsip-prinsip dasar penelitian terkait pembelajaran, ilmu kebahasaan, kesusastraan Bahasa Inggris, serta mendiseminasikan karya akademik dalam bentuk publikasi yang diunggah dalam laman perguruan tinggi dan/atau jurnal nasional/nasional terakreditasi/internasional.				
	Capaian Pembelajaran Mata Kuliah (CPMK)					
	CPMK 1	Mahasiswa mampu menganalisis konsep statistik dalam penelitian ELT secara logis, kritis, dan sistematis.				
	CPMK 2	Mahasiswa mampu merancang prosedur analisis data kuantitatif berbasis prinsip penelitian ilmiah.				
	CPMK 3	Mahasiswa mampu mengolah dan menganalisis data menggunakan statistik deskriptif dan inferensial.				
	CPMK 4	Mahasiswa mampu menginterpretasikan hasil analisis korelasi, regresi, dan uji t secara objektif dan bertanggung jawab.				
	CPMK 5	Mahasiswa mampu menyusun laporan hasil analisis statistik sesuai standar publikasi ilmiah.				
	Kemampuan akhir tiap tahapan belajar (Sub-CPMK)					
	Sub-CPMK 1	Mahasiswa mampu menganalisis dan mengevaluasi peran statistik dalam penelitian ELT secara kritis.				
	Sub-CPMK 2	Mahasiswa mampu merancang prosedur penentuan populasi dan sampel yang valid secara metodologis.				
		Sub-CPMK 3	Mahasiswa mampu menganalisis hubungan variabel, konstruk, dan skala pengukuran secara sistematis			
	Sub-CPMK 4	Mahasiswa mampu mengevaluasi penggunaan statistik deskriptif dan inferensial secara tepat.				

	Sub-CPMK 5	Mahasiswa mampu menginterpretasikan ukuran pemusatan dan variasi data secara komprehensif.				
	Sub-CPMK 6	Mahasiswa mampu merumuskan dan menguji hipotesis penelitian berdasarkan prinsip inferensial.				
	Sub-CPMK 7	Mahasiswa mampu mengevaluasi confidence level dan signifikansi statistik dalam pengambilan keputusan.				
	Sub-CPMK 8	Mahasiswa mampu merancang dan melaksanakan coding serta data preparation secara sistematis.				
	Sub-CPMK 9	Mahasiswa mampu menganalisis dan menginterpretasikan korelasi antarvariabel berbasis studi kasus.				
	Sub-CPMK 10	Mahasiswa mampu merancang dan menguji model regresi linear sederhana secara kritis.				
	Sub-CPMK 11	Mahasiswa mampu mengevaluasi perbedaan rata-rata menggunakan uji t dan melaporkan hasilnya sesuai standar ilmiah.				
	Korelasi CPL terhadap Sub-CPMK					
		CPL1 (%)	CPL2 (%)	CPL6 (%)	Bobot Penilaian (%)	Jumlah Minggu
	Sub-CPMK 1	2	3		5	1
	Sub-CPMK 2	2	3		5	1
	Sub-CPMK 3		4	3	7	1
	Sub-CPMK 4		4	3	7	1
	Sub-CPMK 5		3	4	7	1
	Sub-CPMK 6		3	4	7	1
	Sub-CPMK 7		3	4	7	1
	Sub-CPMK 8		5	5	10	1
	Sub-CPMK 9	3	5	7	15	2
Sub-CPMK 10	3	5	7	15	2	
Sub-CPMK 11	3	5	7	15	2	
	Jumlah (%)	13	43	44	100	14
	Jumlah (sks)	0.39 sks	1.29 sks	1.32 sks	3 sks	
Deskripsi Singkat MK	Mata kuliah ini membahas konsep dan aplikasi statistik dalam penelitian pendidikan Bahasa Inggris. Pembelajaran menekankan integritas, etika akademik, dan kemampuan analisis data secara logis, kritis, dan sistematis untuk mendukung penelitian dan publikasi ilmiah mahasiswa.					
Bahan Kajian: Materi Pembelajaran	1. Statistics and research : Role of statistics in ELT research 2. Population and sample 3. Variables, measurement and types of data 4. Data Preparation 5. Hypothesis and hypothesis testing					

		6. Preliminary Statistical Analysis 7. Inferential Statistics 8. Correlation analysis 9. Regression 10. Comparison of means: T test analysis 11. ANOVA						
Daftar Referensi/ Pustaka		Utama:						
		Cohen, L., Manion, L., Morrison, K., & Bell, R. (2018). <i>Research methods in education (8th ed.)</i> . Routledge. Field, A. (2018). <i>Discovering statistics using IBM SPSS statistics (5th ed.)</i> . SAGE Publications. Pallant, Julie. (2020). <i>SPSS survival manual: a step by step guide to data analysis using IBM SPSS, (7th ed. (7)</i> . London: Open University Press Quirk, T. J. (2016). <i>Excel 2016 for educational and psychological statistics: A guide to solving practical problems</i> . Springer						
		Pendukung:						
		Latifah, U., Mulyono, H., Zulaiha, S., Falah, Z. A., & Rosita, R. (2025). The impact of authentic materials on EFL learners' speaking motivation and anxiety: a project-based learning approach. <i>Discover Education</i> , 4(1), 430. Mulyono, H., & Saskia, R. (2021). Affective variables contributing to Indonesian EFL students' willingness to communicate within face-to-face and digital environments. <i>Cogent Education</i> , 8(1), 1911282. Mulyono, H., Falah, Z. A., Suryoputro, G., & Ibarra, F. (2024). Exploring the influence of EFL teachers' informal digital learning on creative classroom instruction: a cross-sectional study. <i>Discover Education</i> , 3(1), 187.						
Dosen Pengampu		Bitu Dwi Rahmani, Ph.D						
Matakuliah syarat -								
Mg Ke-	Kemampuan akhir tiap tahapan belajar (Sub-CPMK)	Integrasi Keilmuan dengan nilai AIK dan kelimuan lainnya	Penilaian		Bentuk Pembelajaran, Metode Pembelajaran, Penugasan Mahasiswa, [Estimasi Waktu]		Materi Pembelajaran [Referensi/ Pustaka]	Bobot Penilaian (%)
			Indikator	Teknik & Kriteria	Pembelajaran Luring (offline)	Pembelajaran Daring (online)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	Mahasiswa mampu menganalisis dan	QS. Al-Baqarah 11-12	1. Ketepatan dalam menyebutkan konsep dasar statistik dalam penelitian ELT. (C1) 2. Kejelasan dalam menjelaskan peran	Analisis artikel (individual task), diskusi	Case-based discussion: analisis artikel ELT	Reading, video presentasi materi, forum diskusi pada	Statistic and statistics: Role of statistics in ELT research	5

	mengevaluasi peran statistik dalam penelitian ELT secara kritis.		statistik dalam penelitian ELT. (C2) 3. Ketepatan dalam menggunakan teknik statistik sederhana pada contoh penelitian ELT. (C3) 4. Ketepatan dalam menganalisis jenis analisis statistik pada artikel ELT. (C4) 5. Kedalaman dalam mengevaluasi ketepatan penggunaan statistik dalam artikel ilmiah. (C5) 6. Kesesuaian dalam menyusun sintesis kritis peran statistik dalam laporan tertulis. (C6)	kritis kelas, review tertulis singkat		OLU , Padlet	Cohen et al (2018) Field (2018)	
2	Mahasiswa mampu merancang prosedur penentuan populasi dan sampel yang valid secara metodologis.	QS. Al-Hujurat (49): 6	1. Ketepatan dalam menganalisis karakteristik populasi penelitian berdasarkan konteks ELT (C4). 2. Ketepatan dalam menganalisis perbedaan berbagai teknik sampling berdasarkan kelebihan dan keterbatasannya (C4–C5). 3. Ketepatan dalam merancang prosedur sampling yang selaras dengan desain penelitian (C6). 4. Ketepatan dalam mengevaluasi potensi bias sampling dan implikasinya terhadap validitas penelitian (C5).	Studi kasus desain sampling, tugas perancangan prosedur sampling, presentasi kelompok	1. Problem-based learning (PBL): menentukan teknik sampling pada skenario penelitian 2. Workshop perancangan prosedur sampling	Reading, video presentasi materi, forum diskusi pada OLU	Population and sample Cohen et al (2018) Field (2018)	5
3	Mahasiswa mampu menganalisis hubungan variabel, konstruk, dan	QS. Al-Isra' (17): 36	1. Ketepatan dalam menguraikan hubungan konseptual antara konstruk dan variabel penelitian (C4). 2. Ketepatan dalam menganalisis kesesuaian skala pengukuran	Concept mapping variable, tugas individu model konseptual	Mapping konsep, diskusi kelas	Reading, video presentasi materi, forum diskusi pada OLU	Variables, measurement and types of data Cohen et al	7

	skala pengukuran secara sistematis		dengan jenis variabel (C4). 3. Ketepatan dalam mengevaluasi konsistensi operasionalisasi variabel dalam instrumen penelitian (C5). 4. Kesesuaian dalam menyusun pemetaan variabel penelitian dalam bentuk model konseptual sederhana (C6).				(2018) Field (2018) Mulyono et al (2012) Mulyono et al (2024)	
4	Mahasiswa mampu mengevaluasi penggunaan statistik deskriptif dan inferensial secara tepat.	QS. Al-Mulk (67): 3–4	1. Ketepatan dalam mengidentifikasi dan mendifferensiasi karakteristik statistik deskriptif dan inferensial (C1, C4). 2. Ketepatan dalam menganalisis kebutuhan analisis data berdasarkan tujuan penelitian (C4). 3. Kesesuaian dalam menilai teknik analisis yang paling tepat berdasarkan skala data dan desain penelitian (C5). 4. Ketepatan dalam mmengevaluasi kesalahan pemilihan tatis tatistic dalam studi kasus (C5)	Analisis studi kasus, diskusi klasifikasi teknik statistik	Presentasi, demonstrasi perbandingan output deskriptif dan inferensial, Analisa studi kasus	Reading, video presentasi materi, forum diskusi pada OLU	Descriptive statistics vs inferential statistics Cohen (2018) Field (2018) Mulyono et al (2012) Mulyono et al (2024)	7
5	Mahasiswa mampu menginterpretasikan ukuran pemusatan dan variasi data secara	QS. Al-Qamar (54): 49	1. Ketepatan dalam mengidentifikasi dan menjelaskan konsep pengukuran, pemusatan dan variasi data (C1, C2) 2. Ketelitian dalam menghitung dan memverifikasi nilai mean, median, mode, dan standar deviasi (C3).	Praktikum perhitungan statistic, tugas analisis dataset	Diskusi, Latihan dan praktik perhitungan	Reading, video presentasi materi, forum diskusi pada OLU	Central of variability and location Cohen (2018) Field (2018) Mulyono et al	7

	komprehensif.		3. Ketepatan dalam menganalisis pola distribusi data berdasarkan ukuran variasi (C4). 4. Ketepatan dalam menginterpretasikan makna statistik				(2012) Mulyono et al (2024)	
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			deskriptif dalam konteks pembelajaran ELT (C5). 5. Ketepatan dalam mengevaluasi pengaruh outlier terhadap distribusi data (C5).					
6	Mahasiswa mampu merumuskan dan menguji hipotesis penelitian berdasarkan prinsip inferensial.	QS. Al-Hujurat (49): 12	1. Kesesuaian dalam menjelaskan konsep hipotesis dalam penelitian (C2) 2. Kesesuaian dalam merumuskan hipotesis nol dan alternatif secara operasional (C6). 3. Ketepatan dalam menganalisis kesesuaian jenis uji statistik dengan hipotesis (C4). 4. Ketepatan dalam menginterpretasikan dan menilai nilai signifikansi (p-value) secara tepat (C2, C5). 5. Ketepatan dalam mengevaluasi implikasi hasil uji hipotesis terhadap teori dan praktik ELT (C5)	Praktikum uji hipotesis, analisis keputusan statistik	Role-play, workshop uji hipotesis, diskusi	Reading, video presentasi materi, forum diskusi pada OLU	Hypothesis and hypothesis testing Cohen (2018) Field (2018) Mulyono et al (2012) Mulyono et al (2024)	7

7	Mahasiswa mampu mengevaluasi confidence level dan signifikansi statistik dalam pengambilan keputusan.	QS. Al-Anfal (8): 22	1. Ketepatan dalam menganalisis hubungan antara confidence interval dan margin of error (C4). 2. Ketepatan dalam mengevaluasi perbedaan antara signifikansi statistik dan signifikansi praktis (C5). 3. Ketepatan dalam mengevaluasi keputusan penelitian berdasarkan tingkat kepercayaan (C5). 4. Kedalaman dalam mengkritisi overinterpretation hasil statistik dalam artikel ilmiah (C5).	Analisis kasus confidence interval, diskusi kritis artikel	Presentasi, diskusi dan Analisa literatur empiris	Reading, video presentasi materi, forum diskusi pada OLU	Confidence level and statistical significance Cohen (2018) Field (2018) Mulyono et al (2012) Mulyono et al (2024)	7
8	Evaluasi Tengah Semester / Ujian Tengah							
9	Mahasiswa mampu merancang dan melaksanakan coding serta data preparation secara sistematis.	QS. Al-Mutaffifin (83): 1–3	1. Ketepatan dalam mengidentifikasi dan menjelaskan tujuan screening dan coding data penelitian 2. Ketepatan dalam merancang skema screening dan coding data penelitian (C1, C2). 3. Ketelitian dalam melakukan data cleaning dan verifikasi konsistensi data (C3). 4. Ketepatan dalam mengevaluasi kelayakan dataset sebelum analisis (C5). 5. Kesesuaian dalam mendokumentasikan prosedur pengolahan data secara sistematis (C6)	Praktikum data cleaning, audit dataset	Role-play, workshop uji hipotesis, diskusi	Reading, video presentasi materi, forum diskusi pada OLU	Coding and Data preparation Cohen (2018) Field (2018) Mulyono et al (2012) Mulyono et al (2024)	10

10-11	Mahasiswa mampu menganalisis dan menginterpretasikan korelasi antarvariabel berbasis studi kasus.	QS. Fushshilat (41): 53	1. Ketepatan dalam mengidentifikasi dan menjelaskan tujuan dan fungsi analisa korelasi (C1, C2) 2. Ketepatan dalam menganalisis asumsi uji korelasi (C4). 3. Ketepatan dalam menghitung dan menginterpretasikan koefisien korelasi (C4–C5). 4. Ketepatan dalam mengevaluasi kekuatan dan arah hubungan antarvariabel (C5).	Praktikum korelasi, analisis studi kasus, presentasi interpretasi	Role-play, workshop uji hipotesis, diskusi	Reading, video presentasi materi, forum diskusi pada OLU	Correlation analysis Cohen (2018) Field (2018) Mulyono et al (2012) Mulyono et al (2024)	15
12-13	Mahasiswa mampu merancang dan menguji model regresi linear sederhana secara kritis.	QS. Luqman (31): 34	1. Ketepatan dalam mengidentifikasi dan menjelaskan tujuan analisa regresi sederhana (C1, C2) 2. Ketepatan dalam menyusun langkah-langkah dan model persamaan regresi linear sederhana (C6). 3. Ketepatan dalam menganalisis	Praktikum regresi, project analisis prediksi, presentasi model regresi	Role-play, workshop uji hipotesis, diskusi	Reading, video presentasi materi, forum diskusi pada OLU	Regression Cohen (2018) Field (2018) Mulyono et al (2012) Mulyono et al	15
			- kontribusi prediktor berdasarkan nilai R^2 dan koefisien beta (C4). 4. Ketepatan dalam mengevaluasi asumsi regresi (normalitas, linearitas, homoskedastisitas) (C5). 5. Ketepatan dalam menginterpretasikan hasil regresi dalam konteks prediksi pembelajaran ELT (C2, C5).				(2024)	

14-15	Mahasiswa mampu mengevaluasi perbedaan rata-rata menggunakan uji T serta ANOVA dan melaporkan hasilnya sesuai standar ilmiah.	QS. Al-Baqarah (2): 42	1. Ketepatan dalam mengidentifikasi dan menjelaskan tujuan dan fungsi analisa perbandingan rerata (C1, C2) 2. Ketepatan dalam menganalisis kesesuaian jenis uji t (independent/paired) dan ANOVA (C4). 3. Ketepatan dalam menginterpretasikan output uji t dan ANOVA secara tepat (C5). 4. Ketepatan dalam menghitung dan mengevaluasi effect size (Cohen's d) (C5). 5. Kesesuaian dalam menyusun laporan hasil uji t dan ANOVA sesuai format APA	Mini Report	Role-play, workshop uji hipotesis, diskusi	Reading, video presentasi materi, forum diskusi pada OLU	Comparison of means: T test analysis Cohen (2018) Field (2018) Mulyono et al (2012) Mulyono et al (2024)	15
16	Evaluasi Akhir Semester / Ujian Akhir Semester							100

Catatan :

1. **Capaian Pembelajaran Lulusan PRODI (CPL-PRODI)** adalah kemampuan yang dimiliki oleh setiap lulusan PRODI yang merupakan internalisasi dari sikap, penguasaan pengetahuan dan ketrampilan sesuai dengan jenjang prodinya yang diperoleh melalui proses pembelajaran.
2. **CPL yang dibebankan pada mata kuliah** adalah beberapa capaian pembelajaran lulusan program studi (CPL-PRODI) yang digunakan untuk pembentukan/pengembangan sebuah mata kuliah yang terdiri dari aspek sikap, ketrampilan umum, ketrampilan khusus dan pengetahuan.
3. **CP Mata kuliah (CPMK)** adalah kemampuan yang dijabarkan secara spesifik dari CPL yang dibebankan pada mata kuliah, dan bersifat spesifik terhadap bahan kajian atau materi pembelajaran mata kuliah tersebut.
4. **Sub-CP Mata kuliah (Sub-CPMK)** adalah kemampuan yang dijabarkan secara spesifik dari CPMK yang dapat diukur atau diamati dan merupakan kemampuan akhir yang direncanakan pada tiap tahap pembelajaran, dan bersifat spesifik terhadap materi pembelajaran mata kuliah tersebut.
5. **Indikator penilaian** kemampuan dalam proses maupun hasil belajar mahasiswa adalah pernyataan spesifik dan terukur yang mengidentifikasi kemampuan atau kinerja hasil belajar mahasiswa yang disertai bukti-bukti.
6. **Kreteria Penilaian** adalah patokan yang digunakan sebagai ukuran atau tolok ukur ketercapaian pembelajaran dalam penilaian berdasarkan indikator-indikator yang telah ditetapkan. Kreteria penilaian merupakan pedoman bagi penilai agar penilaian konsisten dan tidak bias. Kreteria dapat berupa kuantitatif ataupun kualitatif.
7. **Teknik penilaian:** tes dan non-tes.

8. **Bentuk pembelajaran:** Kuliah, Responsi, Tutorial, Seminar atau yang setara, Praktikum, Praktik Studio, Praktik Bengkel, Praktik Lapangan, Penelitian, Pengabdian Kepada Masyarakat dan/atau bentuk pembelajaran lain yang setara.
9. **Metode Pembelajaran:** Small Group Discussion, Role-Play & Simulation, Discovery Learning, Self-Directed Learning, Cooperative Learning, Collaborative Learning, Contextual Learning, Project Based Learning, dan metode lainnya yg setara.
10. **Materi Pembelajaran** adalah rincian atau uraian dari bahan kajian yg dapat disajikan dalam bentuk beberapa pokok dan sub-pokok bahasan.
11. **Bobot penilaian** adalah prosentasi penilaian terhadap setiap pencapaian CPMK yang besarnya proposional dengan tingkat kesulitan pencapaian CPMK tsb., dan totalnya 100%.
12. **PB**=Proses Belajar, **PT**=Penugasan Terstruktur, **KM**=Kegiatan Mandiri.

Jakarta, 28 Februari 2026

Menyetujui,
Ketua Program Studi Prodi PBI



Silih Warni, Ph.D.
NIDN: 0302128002

Membuat,
Dosen Pengampu



Bitra Dwi Rahmani, Ph.D.
NIDN: 0328078301

PENGEMBANGAN MODUL AJAR
PRODI PENDIDIKAN BAHASA INGGRIS
Fakultas Keguruan dan Ilmu Pendidikan (FKIP)
Universitas Muhammadiyah Prof.DR.HAMKA (UHAMKA)

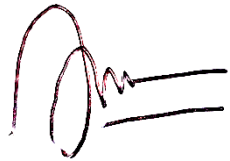
MATA KULIAH : STATISTICS FOR TEFL RESEARCH

Semester : 4

Tahun Akademik: 2025- 2026

Jakarta, 28 Februari 2026

Menyetujui,
Ketua Program Studi Prodi PBI

A handwritten signature in dark ink, consisting of a large, stylized 'S' followed by a horizontal line and a small flourish.

Silih Warni, Ph.D.
NIDN: 0302128002

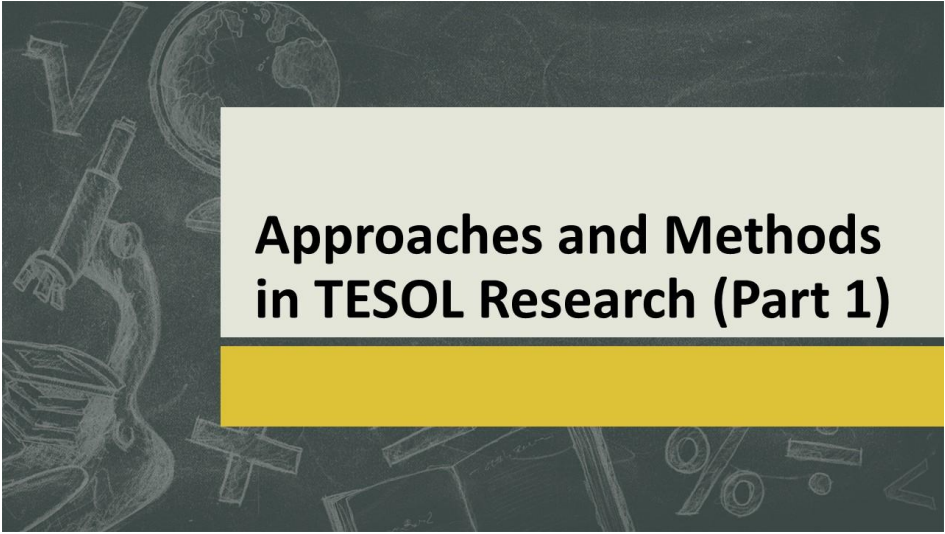
Membuat,
Dosen Pengampu

A handwritten signature in dark ink, featuring a large, stylized 'B' followed by the name 'Bitra' and a horizontal line.

Bitra Dwi Rahmani, Ph.D.
NIDN: 0328078301

Week 1

Sub-CPMK: Mahasiswa mampu menganalisis dan mengevaluasi peran quantitative research dan statistik dalam penelitian ELT secara kritis.



Approaches and Methods in TESOL Research (Part 1)

What is Research?



What is Research?

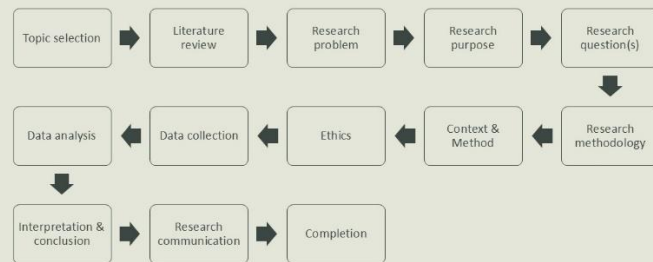
■ Based on Nunan (1992), research is a systematic process of inquiry consisting of three elements or components:

- (1) a question, problem or hypothesis;
- (2) data; and
- (3) analysis and interpretation of data

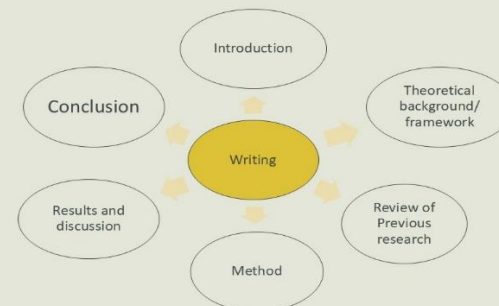
Research is an investigation, examination or inquiry that requires planning, organizing and ethical considerations as well as systematic and careful analysis of data, sound interpretations and conclusions on the basis of evidence and inferences being made.

- Phakiti & Paltridge (2015, p. 10)

Common empirical research processes



Typical structure of a research report



Research Classification (Based on Time)



Research Classification (Based on Purposes)



Research Classification (Based on Methods)

A diagram illustrating research classification based on methods. It features three yellow rounded rectangular boxes arranged horizontally, with a large yellow arrow pointing to the right behind them. The boxes contain the text 'Qualitative', 'Quantitative', and 'Mixed' from left to right.

Quantitative approach



- Quantitative research is an approach that seeks to determine the linear relationship and causal relationships between or among variables
- Variables of interest are clearly spelt out; measurement is standardised;
- Data are analysed via statistical means.
- An objective approach is essential.

Quantitative research designs

- Survey
- Experimental
- Correlational
- Comparative
- Individual difference
- Group difference

Positivistic/postpositivistic paradigm

- Some naturalistic, but mostly controlled or standardised environment
- Hypothesis testing
- One reality
- Objectivity

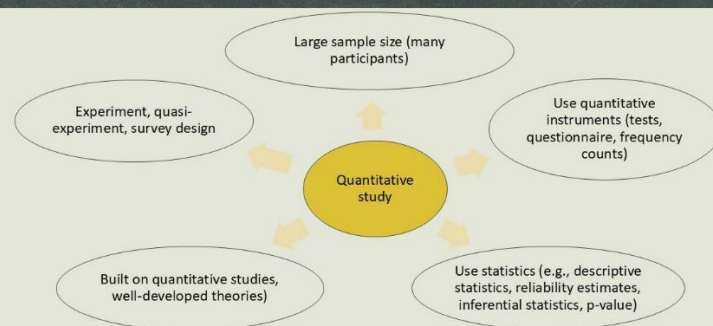
- Statistical
- Probability
- Pearson, t-tests, analysis of variance, reliability analysis, etc

- Tests
- Frequency counts
- Numerical records/data
- Questionnaire
- Data elicitation tasks
- Psycholinguistics methods

Quantitative method

Aspect	Quantitative
Purpose	To study relationships, cause and effect
Design	Developed prior to the study
Approach	Deductive, test theory or hypothesis
Tools	Quantitative, standardised instruments; hard data
Sample	Large; quantity
Analysis	Statistical

How do you know if a study is quantitative?



Recommended readings



Recommended Academic Journals

- *Language Learning*
- *Language Learning and Technology*
- *Language Teaching Research*
- *Second Language Research*
- *Studies in Second Language Acquisition*
- *System*
- *TESOL Quarterly*
- *The Modern Language Journal*

Recommended Academic Journals

- *Annual Review of Applied Linguistics*
- *Applied Linguistics*
- *Computer Assisted Language Learning*
- *English for Specific Purposes*
- *English Language Teaching Journal*
- *International Review of Applied Linguistics*
- *Language Awareness*

WEEK 2

SUB CP-MK: Mahasiswa mampu mengidentifikasi jenis-jenis data penelitian



Learning Activities



Type of Data

- Nominal
- Ordinal
- Interval
- Ratio



Play with Data

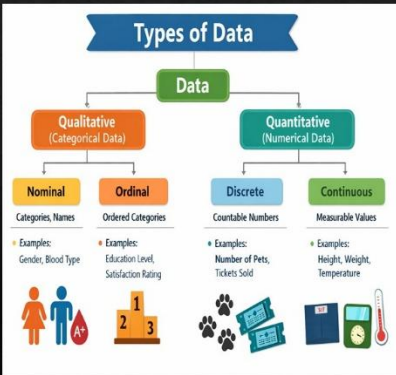
Students' Hobbies



Presenting Data in Excel

- Frequency Table
- Sum
- AVG

Type of Data	Category	Definition	Examples	Key Notes
Nominal	Qualitative	Labels or names without order	Gender (male/female), Religion, Blood type	Cannot be ranked; only classified
Ordinal	Qualitative	Categories with meaningful order	Education level (High school, Bachelor, Master), Satisfaction scale (Poor–Excellent)	Order matters, but differences between ranks are not measurable
Discrete	Quantitative	Countable numbers	Number of children, Cars owned, Books read	Whole numbers only; no fractions
Continuous	Quantitative	Measurable values on a scale	Height, Weight, Temperature, Time	Can take any value within a range, including decimals



TYPE OF DATA IN Quantitative Research

Level	Definition	Examples	Statistical Use
Nominal	Categories without order	Gender, Language, Region	Mode, frequency
Ordinal	Ordered categories, unequal gaps	Satisfaction (Low–High), Education level	Median, rank tests
Interval	Equal intervals, no true zero	Temperature (°C), IQ scores	Mean, standard deviation
Ratio	Equal intervals, true zero	Age, Income, Study hours	All parametric tests

Types of Data

Statistics available for different types of data		
Ratio	Logarithmic statistics	Points to observe/questions/examples
Nominal	1. Mode (the score achieved by the greatest number of people)	Is there a clear 'best runner' that receives the highest score only narrowly leading the other categories? Are there two scores which are tying for the highest score - a tie-modal score?
	2. Frequencies	Which are the highest/lowest frequencies? Is the distribution even across categories?
	3. Chi-square (χ^2) (a statistic that charts the difference between statistically expected and actual scores)	Are differences between scores caused by chance/accident or are they statistically significant, i.e. not simply caused by chance?
Ordinal	1. Mode	Which score on a rating scale is the most frequent?
	2. Median (the score gained by the middle person in a random group of people or, if there is an even number of cases, the score which is midway between the highest score obtained in the lower half of the cases and the lowest score obtained in the higher half of the cases)	What is the score of the middle person in a list of scores?
	3. Frequencies	Do responses tend to cluster around one or two categories of a rating scale? Are the responses skewed towards one end of a rating scale (e.g. 'strongly agree')? Do the responses pattern themselves consistently across the sample? Are the frequencies generally high or generally low (i.e. whether respondents tend to feel strongly about an issue)? Is there a clustering of responses around the central categories of a rating scale (the central tendency; respondents not wishing to appear to be too extreme)?

continued

Types of Data

Statistics available for different types of data		
Ratio	Logarithmic statistics	Points to observe/questions/examples
Nominal	1. Mode (the score achieved by the greatest number of people)	Is there a clear 'best runner' that receives the highest score only narrowly leading the other categories? Are there two scores which are tying for the highest score - a tie-modal score?
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continued

Part A – Match the Examples

Classify each example into **Nominal**, **Ordinal**, **Interval**, or **Ratio**:

- ◆ 1. Students' favorite color
- ◆ 2. Ranking in a spelling competition (1st, 2nd, 3rd)
- ◆ 3. Temperature recorded in Celsius
- ◆ 4. Number of hours spent studying English
- ◆ 5. Blood type (A, B, AB, O)
- ◆ 6. Satisfaction survey (Very Dissatisfied → Very Satisfied)
- ◆ 7. Year of birth (1990, 1995, 2000)
- ◆ 8. Weight of students in kilograms

Answer

- ◆ **Part A – Match the Examples**
- ◆ Students' favorite colour → **Nominal**
- ◆ Ranking in a spelling competition → **Ordinal**
- ◆ Temperature recorded in Celsius → **Interval**
- ◆ Number of hours spent studying English → **Ratio**
- ◆ Blood type (A, B, AB, O) → **Nominal**
- ◆ Satisfaction survey (Very Dissatisfied → Very Satisfied) → **Ordinal**
- ◆ Year of birth (1990, 1995, 2000) → **Interval**
- ◆ Weight of students in kilograms → **Ratio**

Nominal Data

Key Points

- ◆ **Binary/Dichotomous Data:** Data with only two possible values.
- ◆ **Coding Convention:**
 - ◆ 1 = "Yes" / "Present" / "True"
 - ◆ 0 = "No" / "Absent" / "False"

Example Dataset: App Usage and Speaking Scores

Student ID	App Usage (1 = Yes, 0 = No)	Speaking Score
S01	1	85
S02	0	72
S03	1	88
S04	0	70
S05	1	90

Example in ELT Research

- ◆ **Research Focus:** Investigating whether TEFL students use mobile apps for English practice.
- ◆ **Population:** All TEFL students in a university.
- ◆ **Sample:** 100 students from two classes.
- ◆ **Binary Variable:** "Uses English learning app outside class"
 - ◆ 1 = Student uses the app
 - ◆ 0 = Student does not use the app
- ◆ **Analysis:** Researchers compare average speaking test scores between the "1" group and the "0" group to see if app usage is associated with higher performance.

Next Meeting

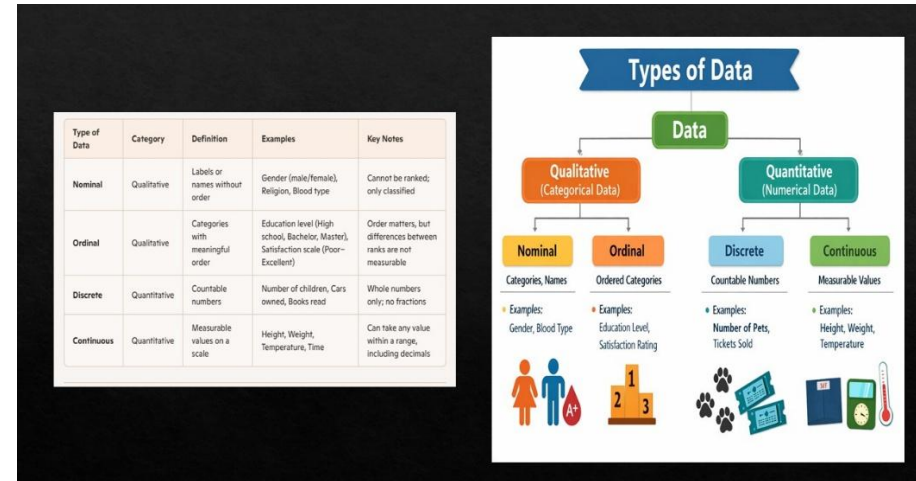
- ◆ Population & Sample
- ◆ Another types of data

Let's Play with the Data

- ◆ [Students' Data 100326 - shared.xlsx](#)

WEEK 3 & 4:

SUB-CP MK: Mahasiswa mampu menganalisis hubungan variabel, konstruk, jenis data, dan skala pengukuran secara sistematis.



Type of Scales in Quantitative Research
(Level of Measurement)

Level	Definition	Examples	Statistical Use
Nominal	Categories without order	Gender, Language, Region	Mode, frequency
Ordinal	Ordered categories, unequal gaps	Satisfaction (Low-High), Education level	Median, rank tests
Interval	Equal intervals, no true zero	Temperature (°C), IQ scores	Mean, standard deviation
Ratio	Equal intervals, true zero	Age, Income, Study hours	All parametric tests

Part A – Match the Examples

Classify each example into **Nominal**, **Ordinal**, **Interval**, or **Ratio**:

<https://forms.gle/quQichJ8eZpjoSos5>

Example in ELT Research- Nominal Scales

- ◆ **Research Focus:** Investigating whether TEFL students use mobile apps for English practice.
- ◆ **Population:** All TEFL students in a university.
- ◆ **Sample:** 100 students from two classes.
- ◆ **Binary Variable:** "Uses English learning app outside class" (nominal scales)
 - ◆ 1 = Student uses the app
 - ◆ 0 = Student does not use the app
- ◆ **Analysis:** Researchers compare average speaking test scores between the "1" group and the "0" group to see if app usage is associated with higher performance.

Nominal Data

- ◆ **Key Points**
- ◆ **Binary/Dichotomous Data:** Data with only two possible values.
- ◆ **Coding Convention:**
 - ◆ 1 = "Yes" / "Present" / "True"
 - ◆ 0 = "No" / "Absent" / "False"

Example Dataset: App Usage and Speaking Scores

Student ID	App Usage (1 = Yes, 0 = No)	Speaking Score
S01	1	85
S02	0	72
S03	1	88
S04	0	70
S05	1	90

Example in ELT Research- Ordinal Scales

- ◆ **Research Focus:** Investigating whether TEFL students use mobile apps for English practice.
- ◆ **Population:** All TEFL students in a university.
- ◆ **Sample:** 100 students from two classes.
- ◆ **The Variable:** "Frequency of using English learning app outside class" (ordinal scales)
 - ◆ Student *always* uses the app
 - ◆ Student *often* uses the app
 - ◆ Student *rarely* uses the app
 - ◆ Students *never* uses the app
- ◆ **Analysis:** Researchers compare the students' preferences in using apps to see if app usage is associated with higher performance.

Example in ELT Research- Interval Scales

- ◆ **Research Focus:** Investigating whether TEFL students use mobile apps for English practice.
- ◆ **Population:** All TEFL students in a university.
- ◆ **Sample:** 100 students from two classes.
- ◆ **The variable:** "Frequency of using English learning app outside class" (interval scales) – How often do you use English learning apps outside the class?

Code	Frequency Category
1	Rarely (1–2 times/week)
2	Sometimes (3–4 times/week)
3	Often (5–6 times/week)
4	Very Often (7+ times/week)
- ◆ **Analysis:** Researchers compare the students' frequency in using apps to see if app usage is associated with higher performance.

Example in ELT Research- Ratio

- ♦ **Research Focus:** Investigating whether TEFL students use mobile apps for English practice.
- ♦ **Population:** All TEFL students in a university.
- ♦ **Sample:** 100 students from two classes.
- ♦ **The variable:** "Frequency of using English learning app outside class" (ratio scales) – How many times per week do you use English learning apps outside class?

Student	Frequency (times/week)
A	0
B	2
C	5
D	10

- ♦ **Analysis:** Researchers count the students' frequency in using apps to see if app usage is associated with higher performance.

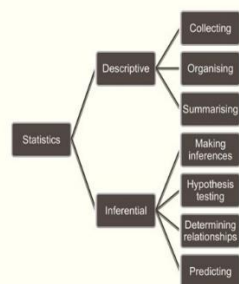
Example in ELT Research- Choose your scales

- ♦ **Research Focus:**
- ♦ **Population:**
- ♦ **Sample:**
- ♦ **Variable:** (nominal/ ordinal/ interval/ ratio scales)
- ♦ **Analysis:**
- ♦ **Reflection**
- ♦ **Question:** Why does understanding these four scales matter in research or classroom assessment?
- ♦ **Heads-up for our next online meeting:** Let's present this, but don't forget to submit it to my email (bitadwi@uhamka.ac.id) by 6th April 2026, at 5 p.m)

Next meeting

- ♦ Descriptive and Inferential Statistics

Two types of statistics in quantitative research



Week 5 :

Sub-cp mk: Mahasiswa mampu merancang prosedur penentuan populasi dan sampel yang valid secara metodologis



2

Probability vs Non-Probability Sampling		
Aspect	Probability Sampling	Non-Probability Sampling
Definition	Every member of the population has a known and equal chance of being selected.	Not all members have an equal chance; selection often depends on researcher's judgment.
Techniques	- Simple random sampling - Stratified sampling - Cluster sampling - Systematic sampling	- Convenience sampling - Purposive sampling - Quota sampling - Snowball sampling
Strengths	- Representative of the population - Results can be generalized - Reduces bias	- Quick and inexpensive - Practical for hard-to-reach populations - Useful for exploratory research
Weaknesses	- Requires a complete population list - More costly and complex	- Not representative - Limited generalization - Higher risk of bias
Best Use	Large-scale quantitative studies, surveys, experiments	Qualitative or exploratory studies, case studies, pilot research

3

Probability Sampling					
Teknik	Representatif	Biaya	Kompleksitas	Generalisasi	Kapan Digunakan
Simple Random				Tinggi	Populasi homogen, ukuran sedang
Systematic				Tinggi	Populasi besar, tersusun rapi
Stratified				Sangat Tinggi	Populasi heterogen
Cluster				Sedang	Populasi tersebar geografis
Multistage				Tinggi	Survei nasional/regiona

4

Non-Probability Sampling					
Teknik	Representatif	Biaya	Kompleksitas	Generalisasi	Kapan Digunakan
Convenience				Tidak	Studi pilot, eksploratori
Purposive				Terbatas	Penelitian kualitatif, expert
Quota				Terbatas	Survei pasar, opini publik
Snowball				Tidak	Populasi tersembunyi
Voluntary				Tidak	Survei online, eksploratori



**LET'S CHECK YOUR
UNDERSTANDING
NOW!**

[HTTPS://FORMS.GLE/QJHVMW60AXPYEYGQ9](https://forms.gle/QJHVMW60AXPYEYGQ9)

EXAMPLE OF NON-PROBABILITY SAMPLING

Study: An in-depth study of teachers' strategies in teaching academic texts in bilingual classrooms.

Method: *Purposive sampling*

Steps: Select teachers who specifically teach bilingual classes and have more than five years of experience.

Strength: Allows the researcher to focus on a relevant group, though the findings cannot be generalized to all teachers.

7

EXAMPLE OF PROBABILITY SAMPLING

Study: A survey on reading proficiency among high school students in Jakarta.

Method: *Stratified random sampling*

Steps: Divide all high schools in Jakarta into regions (East, West, South, North, Central). Randomly select schools from each region, then randomly select students within those schools.

Strength: Results can be generalized to all high school students in Jakarta because every student has a measurable chance of being selected

6



KEY DIFFERENCE

Probability sampling → Best for large-scale surveys, statistically valid, and generalizable.

Non-probability sampling → Best for qualitative or exploratory studies, provides depth but limited generalisation.

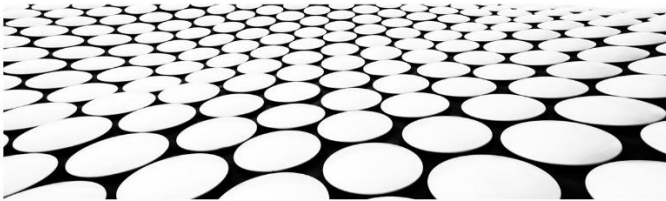
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Week 6:

Sub-CP MK: Mahasiswa mampu menganalisis hubungan variabel, konstruk, dan skala pengukuran secara sistematis

RESEARCH VARIABLES IN ACADEMIC STUDIES

STATISTICS FOR TEFL RESEARCH 4B- WEEK 6



INDEPENDENT VARIABLES

- **Definition:** The variable that is manipulated or categorized to observe its effect on another variable.
- **Role:** Acts as the presumed cause in a cause-and-effect relationship.
- **Example:** In a study on teaching methods, the type of teaching method (traditional vs. interactive) is the independent variable.

DEPENDENT VARIABLES

- **Definition:** The variable that is measured to assess the effect of the independent variable.
- **Role:** Represents the outcome or effect.
- **Example:** Student test scores in the teaching methods study are the dependent variable.

CONTROL VARIABLES

- **Definition:** Variables that are kept constant to prevent them from influencing the outcome.
- **Role:** Ensures that the observed effect is due to the independent variable, not other factors.
- **Example:** Class size, duration of lessons, or teacher experience.

EXTRANEOUS VARIABLES

- **Definition:** Variables that are not intentionally studied but may affect the dependent variable.
- **Role:** Can introduce bias or error if not controlled.
- **Example:** Students' prior knowledge or motivation levels.

MODERATOR VARIABLES

- **Definition:** Variables that influence the strength or direction of the relationship between independent and dependent variables.
- **Role:** Helps explain under what conditions an effect occurs.
- **Example:** Gender may moderate the effect of a teaching method on student performance.

CONFOUNDING VARIABLES

- **Definition:** A type of extraneous variable that is related to both the independent and dependent variables, potentially distorting the results.
- **Role:** Creates false associations or masks true relationships.
- **Example:** In a study on exercise and weight loss, diet could be a confounding variable.

MEDIATOR VARIABLES

- **Definition:** Variables that explain the mechanism through which the independent variable affects the dependent variable.
- **Role:** Provides insight into the process of causation.
- **Example:** Student engagement may mediate the relationship between teaching method and test scores.

TEST YOUR UNDERSTANDING

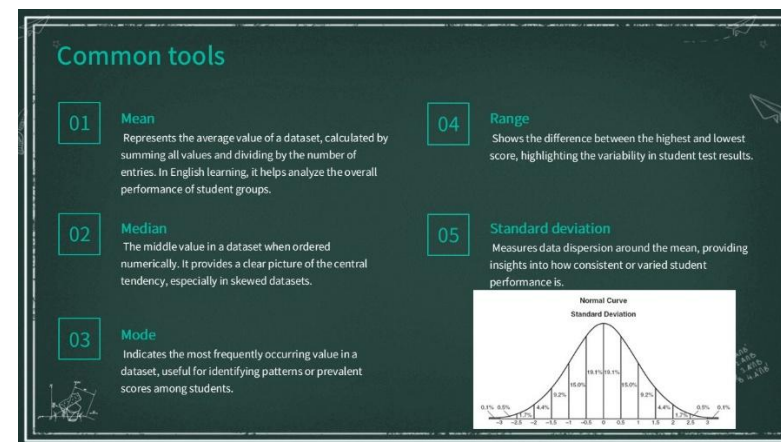
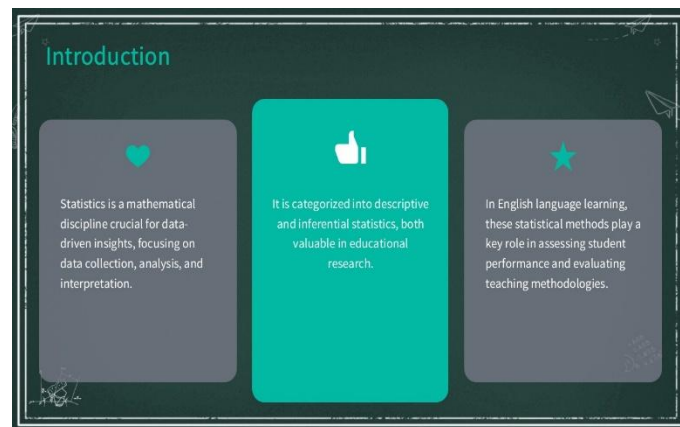
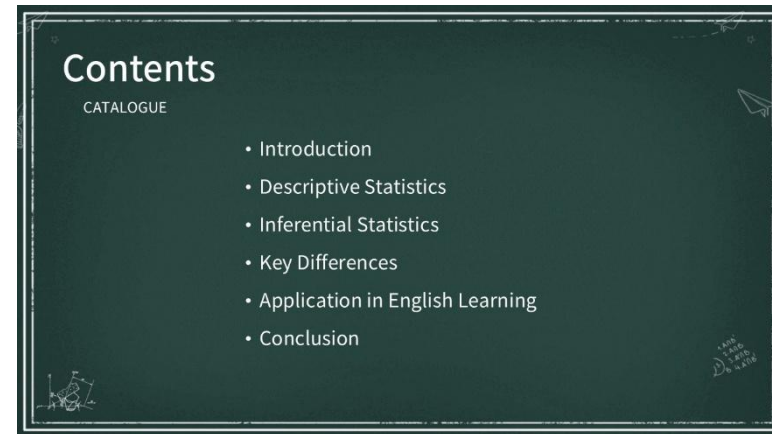
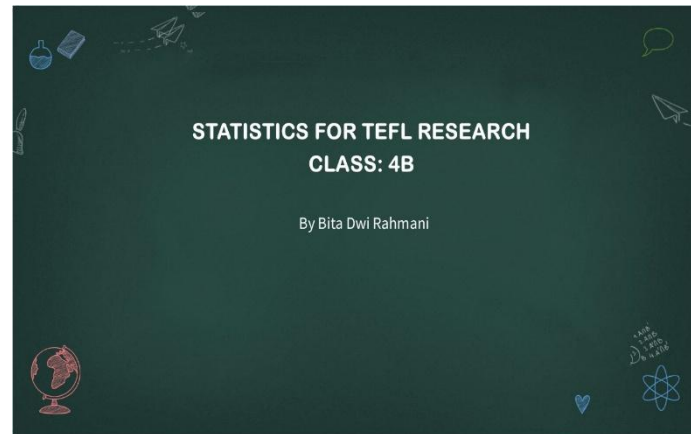
join my quiz.com • 46396449



- <https://wayground.com/admin/quiz/67743ad119ba0bb745d74d4e/independent-and-dependent-variables?page=search-result-page&source=search-result-page&referrer=/admin/search/all/INDEPENDENT%20AND%20DEPENDENT%20VARIABLE>
- <https://wayground.com/join?gc=46396449>

WEEK 9:

SUB-CP MK: Mahasiswa mampu mengevaluasi penggunaan statistic deskriptif dan infrensial secara tepat.



Example in English Learning

Analyzing vocabulary test results

A teacher calculates the mean, median, mode, and range using scores like 60, 70, 75, 80, and 85. This provides a comprehensive understanding of class performance and identifies areas requiring improvement.

1. [Data Set 1](#)
2. [Result Data Set 1](#)

No	Student ID	Vocabulary Test
1		
2		
3		
4		
5		

Benefit

1. Tracking student progress
Regular computation of descriptive statistics over time can help monitor advancements in vocabulary acquisition or other language skills.
2. Identifying learning patterns
Using mode allows teachers to see which vocabulary words or concepts students frequently excel at or struggle with.
3. Evaluating score disparity
Range and standard deviation are used to determine the variability in student scores, helping to assess skill distribution among the class.

Common methods



Hypothesis testing in educational research

Allows researchers to test assumptions, such as whether English storytelling aids vocabulary acquisition, by analyzing sample data against expected outcomes.

Confidence intervals for predictions

Provides a range where the true effect of a teaching method on student performance likely falls, emphasizing the reliability of findings.



Regression analysis in skill development

Determines relationships between variables such as study habits and listening skill improvement, enabling targeted interventions.

Common methods

T-test in group comparisons

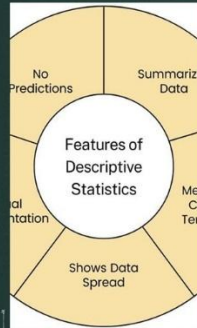
Compares performance between student groups exposed to different teaching methods, such as English movies versus traditional classroom techniques.

ANOVA for multi-group studies

Identifies optimal teaching strategies by analyzing variations across multiple learning experiment groups, fostering informed decision-making.



Key Differences



Summarizes vs. Predicts

Descriptive statistics focus on summarizing and understanding datasets, while inferential statistics aim to predict or draw conclusions about a larger population based on sample data.

Data Scope

Descriptive statistics rely on analyzing the entire dataset without extrapolation, whereas inferential statistics work on sample data to infer trends or characteristics of the population.

Practical Usage

Descriptive methods calculate metrics like mean, median, and range to represent data insights concisely, whereas inferential techniques employ hypothesis testing and regression analysis to validate relationships or trends.

Key Differences



Scope of Application

Descriptive statistics provide insights limited to the collected data, while inferential statistics enable predictions, comparisons, and broader generalizations applicable to educational goals.



Examples in English Learning

Teachers use descriptive measures like average scores to assess student progress, while researchers leverage inferential techniques to test hypotheses about educational methods, such as the effectiveness of using English movies for skill development.

Application in English Learning

Evaluate student performance

Descriptive statistics, such as calculating the mean, median, and range, help teachers assess overall class performance and identify areas where students may need additional support.

Test effectiveness of teaching methods

Inferential statistics are utilized to assess the impact of innovative instructional strategies, like multimedia tools, by comparing outcomes using techniques like t-tests or ANOVA.

Analyze learning trends

Tracking long-term data on student scores and participation provides insights into language acquisition patterns and highlights potential areas for curriculum improvement.

Application in English Learning

“

Support decision-making in education Statistical analysis informs educational policy, helping schools or institutions prioritize resources, adopt new learning technologies, or implement tailored intervention programs.

Conclusion

Descriptive statistics enhance understanding of data

By summarizing and analyzing dataset features like averages, medians, and ranges, descriptive statistics provide educators with a clear overview of classroom performance and trends.

Inferential statistics aid in decision-making and forecasting

By leveraging sample data, teachers and researchers can make evidence-based predictions and improvements in teaching methodologies.

Both are vital for advancing English language teaching and learning

The combination of summarizing data and generalizing findings ensures a well-rounded approach to enhancing student learning outcomes and fostering continual development in educational practices.



$$\begin{array}{r} 1. \text{Ans} \\ 2. \text{Ans} \\ 3. \text{Ans} \\ 4. \text{Ans} \end{array}$$

Decision Tree for Statistical Data Analysis Methods

