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APPENDICES

Appendix 1. Research Instrument

RESEARCH INSTRUMENT

Name	:
Class	:
Reg. Number	:

PRE-TEST

Subject: EnglishClass/Semester: VIII/ITime Allotment: 45 minutes

A. Multiple Choice

Choose the correct answer by crossing (X) a, b, c, or d!

- 1. Ditta has many duties in the school
 - She is ... right now.
 - a. busy
 - b. lazy
 - c. smart
 - d. active
- 2. My sister publishes many novels this year There are ten ... sellers.
 - a. good
 - b. best
 - c. cheap
 - d. expensive
- 3. Kiki has many friends, because she is ... to her friend.
 - a. bland
 - b. soft
 - c. liar
 - d. impatient
- 4. I want to surf the net, but the network is ... in this cafe.
 - a. fine
 - b. stable
 - c. unstable
 - d. fast
- 5. Rio stays alone in the class. His friends leave him. He is a... student.
 - a. rude
 - b. stingy
 - c. humble

- d. bland
- 6. There is a... in the classroom.
 - a. police
 - b. teacher
 - c. doctor
 - d. butcher
- 7. ... must wear seat belts.
 - a. Passenger
 - b. Driver
 - c. Rider
 - d. Stewardess
- 8. There are many ... in the class.
 - a. teachers
 - b. headmasters
 - c. students
 - d. crews
- 9. There is a new \dots in the centre of town.
 - a. cafe
 - b. hospital
 - c. drugstore
 - d. post office
- 10. Anthony Sinisuka Ginting has a good skill in sport.
 - He is a ... player.
 - a. badminton
 - b. tennis
 - c. baseball
 - d. swimming
- 11. The teacher is in the class. She ... the students.
 - a. works
 - b. teaches
 - c. sees
 - d. listens
- 12. All my friends have good score in the class. They ... diligently at home.
 - a. study
 - b. do
 - c. play
 - d. learn











- 13. My sister's hobby is cooking.
 - She ... cakes every other day.
 - a. uses
 - b. paints
 - c. draws
 - d. makes
- 14. Adele will come to Indonesia.

She ... here at 5 p.m. by Garuda Indonesia.

- a. arrives
- b. goes
- c. visits
- d. sings
- 15. Bagas is headache.

He plans to go to doctor.

- The doctor ... him medicine to drink
- a. buys
- b. takes
- c. gives
- d. puts
- B. Complete the paragraph with appropriate words.

talk	places	motorcycle	home	enjoy
experiences	famous	buy	trip	happy

Going to Prambanan Temple

Today, my best friend and I go to Prambanan Temple. We go there by (1).... On the way, we have a small (2).... We talk about many (3)... one of it is holiday in Yogyakarta. We visit many tourism (4).... When we are in Prambanan Temple, we are so (5)... to see a beautiful and great temple. Prambanan Temple is (6)... with the story of Princess Roro Jongrang and Bandung Bondowoso. Bandung Bondowoso curses Princess Roro Jongrang to be the last statue in Prambanan Temple. In this place, we (7)... a lot of souvenirs for our family at (8) Then, we go back to our home. We really (9)... our (10)... to Prambanan Temple today. Name : Class : Reg. Number :

POST-TEST

Subject	: English
Class/Semester	: VIII/I
Time Allotment	: 45 minutes

A. Multiple Choice

Choose the correct answer by crossing (X) a, b, c, or d!

- 1. Rani gets the first student in the class.
 - She is a... student.
 - a. smart
 - b. arrogant
 - c. humble
 - d. kind
- 2. My sister buys me school things, and this dictionary is the most... from others.
 - a. big
 - b. large
 - c. expensive
 - d. cheapest
- 3. Lisa's father likes to do sports everyday.
 - His body is so...
 - a. big
 - b. thin
 - c. fat
 - d. healthy
- 4. Joni has many fruits. He likes to bring them to the class, but he is... to his friends.
 - a. humble
 - b. stingy
 - c. kind
 - d. patient

- 5. My mother is a career woman. She works in the office. She is a... worker, but she loves her family.
 - a. hard
 - b. slow
 - c. fast
 - d. quite
- 6. Many people do... every Sunday.
 - a. cycling
 - b. driving
 - c. running
 - d. jogging
- 7. There are many children playing... in the field.
 - a. badminton
 - b. baseball
 - c. boxing
 - d. basketball
- 8. ... sells medicine to cure a patient.
 - a. The hospital
 - b. The drugstore
 - c. The market
 - d. The clinic
- 9. There are many... in the library.
 - a. tables
 - b. bookcases
 - c. chairs
 - d. computers
- 10. Mr. Afif leads the flag ceremony in the school. He is a...
 - a. secretary
 - b. staff
 - c. teacher
 - d. headmaster
- 11. The librarian... the book in the book case.
 - a. tidies up
 - b. prepares
 - c. reads
 - d. brings









- 12. Some students go to the library in their free time, they usually... books there.
 - a. tidy up
 - b. play
 - c. read
 - d. bring
- 13. Santi will visit her nephew, Roni. His home is in the village, then she cannot... his home.
 - a. understand
 - b. know
 - c. go
 - d. find
- 14. My young sister has a beautiful hobby. She likes drawing. She... a fresh mountain.
 - a. paints
 - b. writers
 - c. makes
 - d. collects
- 15. I have an ambition, I want to be an athlete. Every morning I... basketball to be a master player.
 - a. run
 - b. play
 - c. walk
 - d. try

visit help gudeg popula	r guides
biggest place friendly experie	ences delicious

B. Complete the paragraph with appropriate words.

Yogyakarta

Yogyakarta is a very special city for its art, culture and culinary. It is a perfect 1)... to find the best batik as well as to watch puppet as well as gamelan concert. Ramayana Ballet is the most 2)... performance in Yogyakarta. The play based on an ancient Hindu love story, king Rama and princess Shinta.

There are many great places to visit in Yogyakarta. Some of them are Borobudur Temple, Prambanan Temple, Kalibiru National Park, Keraton Royal Palace, Alun-Alun Selatan Keraton, Malioboro Street, etc. Among all of them, temples become one of the 3)... reasons why people 4)... Yogyakarta.

Local people in Yogyakarta are so warm and 5)... They love to greet and wave hands to many tourists. When tourists get lost along the street, they 6)... to show a way happily. In some tourism objects, there are many local 7)... You need to deal with the price before having a guidance service.

Trying 8)... is a must when visiting Yogyakarta. Gudeg is an authentic Yogyakarta cuisine. It is very (9)... while enjoying this special city. Visiting Yogyakarta gives memorable (10)... for most tourists. Tourists always want to visit it again and again.

(Adapted from https://belajar2.decorhomebestthe.me/2017/07/)

Appendix 2. Lesson Plan

LESSON PLAN

School	: SMP Negeri 1 Tellu Siattinge
Grade/Semester	: VIII/1
Subject	: English
Theme	: Our Busy Roads
Aspect/ Skill	: Vocabulary
Meetings	:1&2
Time Allotment	: 2 x 40'

Standard	3.6 Applying social 4.6 Compose sp	oken and
Competence	functions, text structures, written tra	nsactional
	and linguistic elements of interaction tex	xts that
	spoken and written involve the act	of giving
	transactional interaction and asking for ir	nformation
	texts that involve the act of related to the ex	istence of
	giving and asking for people, objects	, animals
	information regarding the by paying atte	ention to
	existence of people, social function	ns, text
	objects, animals, according structures, and	linguistic
	to the context of their use. elements that a	re correct
	(Note the linguistic element and in context.	
	is/are).	

A. Learning Objectives

- # Students are able to answer vocabulary questions through the digital games "Jeopardy!".
- ₭ Students are able to match the words to their definition or corresponding pictures with digital games.

B. Learning Method

Digital games "Jeopardy!"

C. Learning Material

Vocabulary

No.	Vocabulary	Meaning
1	Accident	Kecelakan
2	Ambulance	Ambulans
3	Bicycle/bike	Sepeda
4	Busy	Padat
5	Bus	Bus
6	Car	Mobil
7	Cart	Dokar
8	Crossroad	Perempatan jalan
9	Driver	Pengemudi
10	Fast	Cepat
11	Motorcycle	Sepeda motor
12	Pedestrian	Pejalan kaki
13	Pedicab	Becak
14	Pavement	Trotoar
15	People	Orang
16	Policewoman	Polisi Wanita
17	Policeman	Polisi
18	Pollution	Polusi
19	Rider	Pengendara
20	Safe	Aman
21	Slow	Lambat
22	T-junction	Pertigaan
23	Traffic sign	Rambu lalu lintas
24	Traffic light	Lampu lalu lintas
25	Traffic jam	Macet
26	Truck	Truk
27	Vehicle	Kendaraan

D. Learning Activity

Steps	Activity	Time Allotment
	1. Teacher gives greeting and	
checks the attendance list.		
	2. Teacher Motivates students	
Opening	to engage their learning	10 Minutes
	motivation and knowledge about	
	Our Busy Roads.	
	3. Teacher gives the objective of	
	the lesson.	
	Exploration	
	1. Students are given learning	
	material about Our Busy Roads.	
	2. Students are given the examples	
	about There Is, There Are, and	
	Many vs Much.	
	3. Students are given some	
	vocabularies that support their	
	understanding.	
	Elaboration	
	1. Students identify the difficult words	
	in the material of Our Busy Roads.	
	2. Students are guided to check	
Main Activity	some the meanings in dictionary.	60 Minutes
	3. Students have been introduced	
	digital games.	
	4. Students are guided to use digital	
	games.	
	5. Students are asked to memorize	
	the words.	

	Confirmation
	1. Students discuss some
	vocabularies that they have
	learned.
	2. Students are allowed to ask
	question related to the material.
	1. Students and teacher reflect on
	learning activities.
	2. Students and teacher draw
	conclusions from the results of
	learning activities.
	3. The teacher assigns students to
Closing	continue finding information 10 Minutes
	related to the material/lesson that
	is being or will be studied.
	4. The teacher delivers the next
	learning material.
	5. The teacher closes the learning
	activity by saying greetings and
	praying.

E. Source of Media

English book, laptop, internet, and LCD projector.

Makassar, September 2021

The Researcher

W

Yulia Udin Safitri F022192009

LESSON PLAN

School	: SMP Negeri 1 Tellu Siattinge
Grade/Semester	: VIII/1
Subject	: English
Theme	: Our Busy Roads
Aspect/ Skill	: Vocabulary
Meetings	: 3 & 4
Time Allotment	: 2 x 45'

Standard	3.6 Applying social 4.6 Compose spoken and
Competence	functions, text structures, written transactional
	and linguistic elements of interaction texts that
	spoken and written involve the act of giving
	transactional interaction and asking for information
	texts that involve the act of related to the existence of
	giving and asking for people, objects, animals
	information regarding the by paying attention to
	existence of people, social functions, text
	objects, animals, according structures, and linguistic
	to the context of their use. elements that are correct
	(Note the linguistic element and in context.
	is/are).

A. Learning Objectives

- Students are able to understand the meaning of each vocabulary in the Our Busy Roads (Adjective, Noun, and Verb).
- Students are able to answer questions based on the Our Busy Roads properly.

B. Learning Method

Digital games "Kahoot!"

C. Learning Material

Vocabulary

No.	Vocabulary	Meaning
1	Accident	Kecelakaan
2	Afraid	Takut
3	Bank	Bank
4	Busy	Sibuk
5	Brave	Berani
6	Bridge	Jembatan
7	Care	Peduli
8	Cart	Dokar
9	Crowded	Ramai/sesak
10	Church	Gereja
11	Difficult	Sulit
12	Discipline	Kedisplinan
13	Dry Season	Musim kemarau
14	Direction	Arah
15	Far	Jauh
16	Hard	Keras
17	Hospital	Rumah Sakit
18	Hotel	Hotel
19	Luxurious	Mewah
20	Market	Pasar
21	Mosque	Masjid
22	No entry	Dilarang masuk
23	No car entry	Mobil diilarang masuk
24	No truck	Truk dilarang masuk
25	No rotate	Dilarang berputar
26	No surpass	Dilarang mendahului
27	Sunken road	Jalan cekung

D. Learning Activity

Steps	Activity	Time Allotment
Opening	 Teacher and students pray together before the teaching and learning activities begin. Teacher gives greeting and checks the attendance list. Teacher Motivates students to engage their learning motivation and knowledge about Our Busy Roads. The teacher describes the purpose of the topic to be studied. 	10 Minutes
	 Students are given learning material about Our Busy Roads. Students are given some vocabularies that support their understanding. Elaboration Students identify the difficult words in the material of Our 	
Main Activity	Words in the material of Our Busy Roads.2. Students are guided to check the meanings in the dictionary.3. Students are guided to use	60 Minutes
	digital games.	

	Confirmation	
	1. Students discuss some	
	vocabularies that they have	
	learned.	
	2. Students are allowed to ask	
	question related to the material.	
	1. Students and teacher reflect on	
	learning activities.	
	2. Students and teacher draw	
	conclusions from the results of	
	learning activities.	
	3. The teacher assigns students to	
Closing	continue looking for information	10 Minutes
	anywhere related to the	
	material/lesson that is being or	
	will be studied.	
	4. The teacher delivers the next	
	learning material.	
	5. The teacher closes the learning	
	activity by saying greetings and	
	prayers.	

E. Source of Media

English book, laptop, internet, and LCD projector.

Makassar, October 2021 The Researcher

W

Yulia Udin Safitri F022192009

LESSON PLAN

School	: SMP Negeri 1 Tellu Siattinge
Grade/Semester	: VIII/1
Subject	: English
Theme	: Our Busy Roads
Aspect/ Skill	: Vocabulary
Meetings	: 5 & 6
Time Allotment	: 2 x 45'

Standard	3.6 Applying social 4.6 Compose spoken and
Competence	functions, text structures, written transactional
	and linguistic elements of interaction texts that
	spoken and written involve the act of giving
	transactional interaction and asking for information
	texts that involve the act of related to the existence of
	giving and asking for people, objects, animals
	information regarding the by paying attention to
	existence of people, social functions, text
	objects, animals, according structures, and linguistic
	to the context of their use. elements that are correct
	(Note the linguistic element and in context.
	is/are).

A. Learning Objectives

- Students are able to understand the meaning of each vocabulary in the Our Busy Roads (Adjective, Noun, and Verb).
- Students are able to answer questions based on the Our Busy Roads properly.

B. Learning Method

Digital games

C. Learning Material

Vocabulary

No.	Vocabulary	Meaning	
1	Church	Gereja	
2	Driving	Mengemudi	
3	Cycling	Bersepeda	
4	Horse	Kuda	
5	House	Rumah	
6	Mosque	Masjid	
7	Passenger	Penumpang	
8	People	Orang	
9	Plane	Pesawat terbang	
10	Pollution	Polusi	
11	Rainy season	Musim hujan	
12	Road	Jalan	
13	Safe	Aman	
14	4 School Sekolah		
15	Smoke	Asap	
16	Steep slope	Turunan curam	
17	Тахі	Taksi	
18	Town	Kota	
19	Train	Kereta	
20	Transportation	Transportasi	
21	Tree	Pohon	
22	Temple	Candi	
23	Violation	Pelanggaran	
24	Walk	Berjalan	
25	Water	Air	
26	Wise	Bijaksana	
27	Zoo	Kebun binatang	

D. Learning Activity

Steps	Activity	Time Allotment
	1. Teacher and students pray together	
	before the teaching and learning	
	activities begin.	
	2. Teacher gives greeting and checks	
Opening	the attendance list.	10 Minutes
	3. Teacher motivates the student to	
	engage their learning and	
	knowledge about Our Busy Roads.	
	4. Teacher gives the objective of the	
	lesson.	
	Exploration	
	1. Students are given learning	
	material about Our Busy Roads.	
	2. Students are given the examples	
	about Adjective, Noun, and Verb.	
	3. Students are given some	
	vocabularies that support their	
	understanding.	
	4. Students listen interactively the	
	teacher gives some descriptions	
	about objects.	
Main Activity	Elaboration	60 Minutes
	1. Students identify the difficult words	
	in the material of Our Busy Roads.	
	2. Students are guided to use digital	
	games.	
	3. Students are asked to memorize the	
	words.	

	<u>Confirmation</u>	
	1. Students discuss the vocabulary	
	that they have learned.	
	2. Students are allowed to ask	
	question related to the material.	
	3. The teacher provides reinforcement	
	on material that students do not	
	understand.	
	1. Students and teacher reflect on	
	learning activities.	
	2. Students and teacher draw	
	conclusions from the results of	
	learning activities.	
Closing	3. Assign students to continue to look	10 Minutes
	for information anywhere related to	
	the material/lesson that is or will be	
	studied.	
	4. The teacher presents the next	
	learning material.	
	5. The teacher closes the learning	
	activity by saying greetings and	
	prayers.	

E. Source of Media

₭ English book, laptop, internet, and LCD projector.

Makassar, October 2021

The Researcher

W

Yulia Udin Safitri F022192009

Appendix 3. The Students' Score of Pre-test and Post-test of Experimental Group

NO.	STUDENT'S NAME	PRE-TEST SCORE	POST-TEST SCORF	Y ₁	Y ₁ ²
1	AD	60	78	45.00	2025.00
2	AFM	64	76	33.33	1111.11
3	AV	68	78	31.25	976.56
4	ALD	64	82	50.00	2500.00
5	ARP	68	84	50.00	2500.00
6	AS	74	86	46.15	2130.18
7	AP	70	88	60.00	3600.00
8	AR	64	78	38.89	1512.35
9	AN	66	84	52.94	2802.77
10	AL	74	88	53.85	2899.41
11	CL	70	80	33.33	1111.11
12	CHP	72	90	64.29	4132.65
13	FZ	74	86	46.15	2130.18
14	IDP	60	84	60.00	3600.00
15	IM	64	82	50.00	2500.00
16	MAK	68	78	31.25	976.56
17	MGA	64	84	55.56	3086.42
18	MIS	70	86	53.33	2844.44
19	MSA	72	88	57.14	3265.31
20	MA	74	90	61.54	3786.98
21	MSR	60	76	40.00	1600.00
22	NZ	70	78	26.67	711.11
23	SM	64	80	44.44	1975.31
24	SSP	68	84	50.00	2500.00
25	TAC	80	96	80.00	6400.00
26	TF	60	88	70.00	4900.00
27	WNJ	64	84	55.56	3086.42
TOTAL		1826	2256	1340.67	70663.87

The Students' Score of Pre-test and Post-test of Experimental Group

Percentage N-Gain Score

Experimental Group

NO.	STUDENT'S NAME	PRE-TEST SCORE	POST-TEST SCORE	N-Gain	% N-Gain
1	AD	60	78	0.45	45.00
2	AFM	64	76	0.33	33.33
3	AV	68	78	0.31	31.25
4	ALD	64	82	0.50	50.00
5	ARP	68	84	0.50	50.00
6	AS	74	86	0.46	46.15
7	AP	70	88	0.60	60.00
8	AR	64	78	0.39	38.89
9	AN	66	84	0.53	52.94
10	AL	74	88	0.54	53.85
11	CL	70	80	0.33	33.33
12	CHP	72	90	0.64	64.29
13	FZ	74	86	0.46	46.15
14	IDP	60	84	0.60	60.00
15	IM	64	82	0.50	50.00
16	MAK	68	78	0.31	31.25
17	MGA	64	84	0.56	55.56
18	MIS	70	86	0.53	53.33
19	MSA	72	88	0.57	57.14
20	MA	74	90	0.62	61.54
21	MSR	60	76	0.40	40.00
22	NZ	70	78	0.27	26.67
23	SM	64	80	0.44	44.44
24	SSP	68	84	0.50	50.00
25	TAC	80	96	0.80	80.00
26	TF	60	88	0.70	70.00
27	WNJ	64	84	0.56	55.56
TOTAL		1826	2256	13.41	1340.67

Appendix 4. The Students' Score of Pre-test and Post-test of Control Group

NO.	STUDENT'S NAMF	PRE-TEST SCORF	POST-TEST SCORF	Y2	Y ₂ ²
1	AI	60	74	35.00	1225.00
2	AM	62	78	42.11	1772.85
3	AK	68	72	12.50	156.25
4	ARU	64	74	27.78	771.60
5	AAB	62	66	10.53	110.80
6	AT	64	78	38.89	1512.35
7	CO	62	72	26.32	692.52
8	FJ	70	90	66.67	4444.44
9	FA	64	68	11.11	123.46
10	MQ	70	74	13.33	177.78
11	MI	60	72	30.00	900.00
12	MIL	64	74	27.78	771.60
13	MRA	66	70	11.76	138.41
14	MA	60	64	10.00	100.00
15	NA	64	68	11.11	123.46
16	NA	62	76	36.84	1357.34
17	NT	60	70	25.00	625.00
18	NR	68	76	25.00	625.00
19	NN	70	80	33.33	1111.11
20	NA	72	78	21.43	459.18
21	NT	74	80	23.08	532.54
22	RA	60	74	35.00	1225.00
23	RK	62	68	15.79	249.31
24	RA	60	64	10.00	100.00
25	SA	64	72	22.22	493.83
26	ZS	70	96	86.67	7511.11
27	MF	60 68 20.00		20.00	400.00
TOTAL		1742	1996	729.24	27709.95

The Students' Score of Pre-test and Post-test of Control Group Score

Percentage N-Gain Score

Control Group

NO.	STUDENT'S NAME	PRE-TEST SCORE	POST-TEST SCORE	N-Gain	% N-Gain
1	AI	60	74	0.35	35.00
2	AM	62	78	0.42	42.11
3	AK	68	72	0.13	12.50
4	ARU	64	74	0.28	27.78
5	AAB	62	66	0.11	10.53
6	AT	64	78	0.39	38.89
7	CO	62	72	0.26	26.32
8	FJ	70	90	0.67	66.67
9	FA	64	68	0.11	11.11
10	MQ	70	74	74 0.13	
11	MI	MI 60 72		0.30	30.00
12	MIL	MIL 64 74		0.28	27.78
13	MRA	66 70		0.12	11.76
14	MA	60	60 64		10.00
15	NA	64	64 68		11.11
16	NA	62	76	0.37	36.84
17	NT	60	70	0.25	25.00
18	NR	68	76	0.25	25.00
19	NN	70	80	0.33	33.33
20	NA	72	78	0.21	21.43
21	NT	74	80	0.23	23.08
22	RA	60	74	0.35	35.00
23	RK	62	68	0.16	15.79
24	RA	60	64	0.10	10.00
25	SA	64	72	0.22	22.22
26	ZS	70	96	0.87	86.67
27	MF	60	68	0.20	20.00
TOTAL		1742	1996	7.29	729.24

Appendix 5. Normality of Test Experimental Group

Normality Test

Experimental Group

X	F	Z	<i>F(Z)</i>	FK	S(Z)	<i>F</i> (<i>Z</i>) - S(<i>Z</i>)/
26.67	1	-1.83209	0.033469	1	0.037037	0.003568233
31.25	2	-1.46681	0.071214	3	0.111111	0.039897172
33.33	2	-1.30077	0.096668	5	0.185185	0.088516882
38.89	1	-0.858	0.195445	6	0.222222	0.026777153
40.00	1	-0.76945	0.220813	7	0.259259	0.038446362
44.44	1	-0.41524	0.338984	8	0.296296	0.042688017
45.00	1	-0.37096	0.355334	9	0.333333	0.022000344
46.15	2	-0.279	0.390122	11	0.407407	0.017285208
50.00	4	0.027531	0.510982	15	0.555556	0.044573746
52.94	1	0.261937	0.603315	16	0.592593	0.010722445
53.33	1	0.293191	0.615312	17	0.62963	0.0143176
53.85	1	0.334062	0.630834	18	0.666667	0.035833002
55.56	2	0.470298	0.680929	20	0.740741	0.059811699
57.14	1	0.596803	0.724681	21	0.777778	0.053097137
60.00	2	0.824512	0.795176	23	0.851852	0.056676119
61.54	1	0.947125	0.828212	24	0.888889	0.060676475
64.29	1	1.166076	0.878208	25	0.925926	0.047717827
70.00	1	1.621494	0.947544	26	0.962963	0.015418853
80.00	1	2.418475	0.992207	27	1	0.007792852
Lcount						0.088516882

Appendix 6. Normality Test of Control Group

Normality Test

Control Group

X	F	Z	F(Z)	FK	S(Z)	<i>F</i> (<i>Z</i>) - S(<i>Z</i>)/
10.00	2	-0.96887	0.166306	2	0.074074	0.092231958
10.53	1	-0.93889	0.173894	3	0.111111	0.062783077
11.11	2	-0.90558	0.182579	5	0.185185	0.002605723
11.76	1	-0.86835	0.192601	6	0.222222	0.029621056
12.50	1	-0.82647	0.204269	7	0.259259	0.054990338
13.33	1	-0.779	0.217989	8	0.296296	0.078307598
15.79	1	-0.63911	0.261377	9	0.333333	0.071956213
20.00	1	-0.39928	0.344844	10	0.37037	0.025526869
21.43	1	-0.31791	0.375276	11	0.407407	0.032130963
22.22	1	-0.27271	0.39254	12	0.444444	0.051904515
23.08	1	-0.22402	0.41137	13	0.481481	0.070111622
25.00	2	-0.11449	0.454426	15	0.555556	0.101129604
26.32	1	-0.03954	0.484229	16	0.592593	0.108363166
27.78	2	0.043732	0.517441	18	0.666667	0.149225859
30.00	1	0.170306	0.567615	19	0.703704	0.136088353
33.33	1	0.360168	0.640639	20	0.740741	0.100101386
35.00	2	0.455099	0.675481	22	0.814815	0.139333715
36.84	1	0.560023	0.712268	23	0.851852	0.139583707
38.89	1	0.676605	0.750672	24	0.888889	0.138217188
42.11	1	0.859805	0.805052	25	0.925926	0.120874136
66.67	1	2.258789	0.988052	26	0.962963	0.02508877
86.67	1	3.397961	0.999661	27	1	0.000339451
			Lcount			0.149225859

Using SPSS

One-Sample Kolmogorov-Smirnov Test

	-	Experiment	Control
Ν		27	27
Normal Parameters ^a	Mean	49.6544	27.0093
	Std. Deviation	12.54790	1.75576E1
Most Extreme	Absolute	.104	.166
Differences	Positive	.089	.149
	Negative	104	166
Kolmogorov-Smirnov Z		.538	.864
Asymp. Sig. (2-tailed)		.934	.444

a. Test distribution is Normal.

Appendix 7. Homogeneity Test

No.	Experimental	Control	c	1 1	۵	2	(d ₁ -	$(\overline{d}_1)^2$	$(d_2 - \overline{d}_2)^2$
1	45.00	35.00	4.65	4562	7.99	1184	24.549	62956	16.64671429
2	33.33	42.11	16.3	2123	15.09	9645	45.049	71427	9.151984136
3	31.25	12.50	18.4	0456	14.5	0882	77.35627702		5.941863672
4	50.00	27.78	0.34	5438	0.76	8962	85.819	50477	127.7410978
5	50.00	10.53	0.34	5438	16.4	825	85.819	50477	19.45937394
6	46.15	38.89	3.50	0716	11.8	8007	37.315	04806	0.03653818
7	60.00	26.32	10.3	4544	0.693	3027	0.5418	70102	129.4633361
8	38.89	66.67	10.7	6567	39.6	5785	1.3371	51883	761.0220527
9	52.94	11.11	3.28	6615	15.89	9771	39.976	60184	14.64196999
10	53.85	13.33	4.19	1592	13.6	7548	29.351	77546	2.573651736
11	33.33	30.00	16.3	2123	2.99	1184	45.049	71427	82.44709945
12	64.29	27.78	14.6	3115	0.76	8962	25.218	80218	127.7410978
13	46.15	11.76	3.50	0716	15.24	4411	37.315	04806	10.06721792
14	60.00	10.00	10.3	4544	17.0	0882	0.5418	70102	24.37983281
15	50.00	11.11	0.34	5438	15.89	9771	85.819	50477	14.64196999
16	31.25	36.84	18.4	0456	9.83	3289	77.356	27702	5.008345243
17	55.56	25.00	5.90	0994	2.008816		13.75168304		101.252018
18	53.33	25.00	3.67	8772	2.008	3816	35.171	40433	101.252018
19	57.14	33.33	7.48	8295	6.324	4517	4.4987	45315	33.02462045
20	61.54	21.43	11.8	3839	5.58	0245	5.1737	13289	42.13279021
21	40.00	23.08	9.65	4562	3.93	1893	0.0020	46814	66.24868062
22	26.67	35.00	22.9	879	7.99	1184	178.98	62706	16.64671429
23	44.44	15.79	5.21	0117	11.2 ⁻	1934	19.352	98456	0.725699289
24	50.00	10.00	0.34	5438	17.00	0882	85.819	50477	24.37983281
25	80.00	22.22	30.3	4544	4.78	6594	429.98	66008	53.06581084
26	70.00	86.67	20.3	4544	59.6	5785	115.26	42354	2264.487179
27	55.56	20.00	5.90	0994	7.008	8816	13.751	68304	25.62795625
Mean	49.65	27.01	9.60	932	12.0	7122			
$\sum (d_{ij} - \overline{d}_{ij})^2$							1600.177166		4079.807465
ni	27	27							
Ν	54								
K	2								
d				10.	84027	117			
$\overline{d}_i - \overline{d}$				-1.23	3095	1.23	30951		
$ni.(\overline{d}_i - \overline{d})^2$		40.9	40.9115 40.9115						

Homogeneity Test

Using SPSS

Test of Homogeneity of Variances

Percentage n Gain Score

Levene Statistic	df1	df2	Sig.	
.749	1	52	.391	

The Mean Score

A. Experimental Group

$$\overline{X_1} = \frac{\sum X_1}{n_1} = \frac{1.340,67}{27} = 49,65$$

B. Control Group

$$\overline{X_2} = \frac{\sum X_2}{n_2} = \frac{729,4}{27} = 27,01$$

Appendix 9. Variance and Standard Deviation

Variance and Standard Deviation

A. Variance Experimental Group

$$S_{1}^{2} = \frac{\sum Y_{1}^{2} - \frac{(\sum Y_{1})^{2}}{n_{1}}}{n_{1} - 1} = \frac{70.663,87 - \frac{(1.340,67)^{2}}{27}}{26} = \frac{70.663,87 - 66.570,22}{26}$$
$$= 157,44$$

Standard Deviation Experimental Group

$$S_1 = \sqrt{\frac{\sum {Y_1}^2 - \frac{(\sum Y_1)^2}{n_1}}{n_1 - 1}} = \sqrt{157,44} = 12,55$$

B. Variance Control Group

$$S_2^2 = \frac{\sum Y_2^2 - \frac{(\sum Y_2)^2}{n_2}}{n_2 - 1} = \frac{27.709,95 - \frac{(729,24)^2}{27}}{26} = \frac{27.709,95 - 19.695,96}{26}$$
$$= 308,23$$

Standard Deviation Control Group

$$S_1 = \sqrt{\frac{\sum Y_1^2 - \frac{(\sum Y_1)^2}{n_1}}{n_1 - 1}} = \sqrt{308,23} = 17,56$$

Appendix 10. T-test and T-table

1. T-test

$\overline{X}_{1} = 49,65$	S ₁ = 157,44
$\overline{X}_{2} = 27,01$	S ₂ = 308,23

The Significance Different

t	$\overline{X}_1 - \overline{X}_2$
ι	$-\sqrt{\frac{(n_1-1)s_1^2+(n_2-1)s_2^2}{n_1+n_2-2}}\left(\frac{1}{n_1}+\frac{1}{n_2}\right)$
_	49,65 - 27,01
_	$\sqrt{\frac{26 \cdot 157,44 + 26 \cdot 308,23}{52} \cdot \left(\frac{1}{27} + \frac{1}{27}\right)}$
_	22,64
_	$\sqrt{\frac{4.093,44+8.013,98}{52}} \cdot (0,037+0,037)$
=	$\frac{22,64}{\sqrt{\frac{12.107,42\cdot0,074}{52}}}$
=	$\frac{22,64}{\sqrt{17,7}}$
=	22,64 4,15
=	5,453

2. T-table

For level of significance (D) = 0.05

Degree of freedom (df) = (N1 + N2) - 2 = (27 + 27) - 2 = 52

T-table = 2.007

Independent Samples Test

		Levene for Equ Varia	's Test ality of nces			t-test for Equality of Means				
						Sig (2	Moon	Std Error	95% Co Interva Diffe	onfidence al of the erence
		F	Sig.	т	df	tailed)	Difference	Difference	Lower	Upper
Percentage n Gain Score	Equal variances assumed	.749	.391	5.453	52	.000	-22.64519	4.15317	-30.97914	-14.31123
	Equal variances not assumed			5.453	47.064	.000	-22.64519	4.15317	-30.99999	-14.29038

Appendix 11. The Distribution of T-table

The Distribution of T-table

Df	^t 0.10	^t 0.05	t _{0.025}	^t 0.01	^t 0.005
1	3.078	6.314	12.706	31.821	63, 657
2	1,886	2,920	4,303	6,965	9,925
3	1,638	2,353	3,182	4,541	5,841
4	1,533	2,132	2,776	3,747	4,604
5	1,476	2,015	2,571	3,365	4,032
6	1,440	1,943	2,447	3,143	3,707
7	1,415	1,895	2,365	2,998	3,499
8	1,397	1,860	2,306	2,896	3,355
9	1,383	1,833	2,262	2,821	3,250
10	1,372	1,812	2,228	2,764	3,169
11	1,363	1,796	2,201	2,718	3,106
12	1,356	1,782	2,179	2,681	3,055
13	1,350	1,771	2,160	2,650	3,012
14	1,345	1,761	2,145	2,624	2,977
15	1,341	1,753	2,131	2,602	2,947
16	1,337	1,746	2,120	2,583	2,921
17	1,333	1,740	2,110	2,567	2,898
18	1,330	1,734	2,101	2,552	2,878
19	1,328	1,729	2,093	2,539	2,861
20	1,325	1,725	2,086	2,528	2,845
21	1,323	1,721	2,080	2,518	2,831
22	1,321	1,717	2,074	2,508	2,819
23	1,319	1,714	2,069	2,500	2,807
24	1,318	1,711	2,064	2,492	2,797
25	1,316	1,708	2,060	2,485	2,787
26	1,315	1,706	2,056	2,479	2,779
27	1,314	1,703	2,052	2,473	2,771
28	1,313	1,701	2,048	2,467	2,763
29	1,311	1,699	2,045	2,462	2,756
30	1,310	1,697	2,042	2,457	2,750
31	1,309	1,696	2,040	2,453	2,744
32	1,309	1,694	2,037	2,449	2,738
33	1,308	1,692	2,035	2,445	2,733
34	1,307	1,691	2,032	2,441	2,728
30	1,306	1,090	2,030	2,430	2,724
30	1,300	1,000	2,020	2,434	2,719
38	1,303	1,007	2,020	2,431	2,713
30	1,304	1,000	2,024	2,429	2,712
40	1,303	1,005	2,023	2,420	2,700
40	1,303	1,004	2,021	2,423	2,704
42	1,302	1,000	2,020	2,421	2,701
43	1,302	1,681	2,010	2,416	2,000
40	1,301	1,680	2,015	2,110	2,000
45	1,301	1,679	2 014	2 412	2 690
46	1,300	1.679	2,013	2,410	2,687
47	1,300	1,678	2.012	2,408	2.685
48	1,299	1.677	2,011	2,407	2,682
49	1,299	1.677	2,010	2,405	2,680
50	1,299	1,676	2,009	2,403	2,678
51	1,298	1,675	2,008	2,402	2,676
52	1,298	1,675	2,007	2,400	2,674
	,			,	, -

Appendix 12. Documentation



Documentation







