
The effectiveness of pre-reading activity by using QARS towards students reading comprehension at A2 level

Alif Jihan Afifah¹, Rendhi Fatrisna Yuniar²

Universitas Islam Negeri UIN Maulana Malik Ibrahim Malang; Jalan Gajayana 50 Malang 65144, Jawa Timur, Indonesia, +62341552398

e-mail: ¹200107110012@student.uin-malang.ac.id, ²rendhyfatrisna@tbi-uin-malang.com

ABSTRACT

Keywords:

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Reading is a receptive skill that involves decoding the written symbol and understanding the meaning. According to CEFR Framework the reading abilities are divided into several level namely: A1, A2, B1, B2, C1, and C2. Throughout the level the educator can adapt the material for student capability. The study object determine the effectiveness pre-reading activity using the question-answer strategy (QARS) to improve the reading comprehension a A2 level. The study employed the quantitative method, involving 57 students in eleventh-grade from MAN 1 MALANG, by divided into experimental and control groups. The data collected using pre-test and post-test by analyzed Mann-Whitney U test which obtained the P-values 0.00. The result revealed that the experimental group achieved a significantly higher score 89.25 which compared to control class who achieved score 76.66. These study finding suggest the incorporation QARS into Pre-reading activities to enhance students reading comprehension. The study implication engage the educator to integrate the QARS into their teaching strategies to foster the critical thinking for student.

1. INTRODUCTION

Reading is a fundamental activity for gaining the information and enhancing knowledge, particularly in academic context. In the contemporary digital era, students have uninterrupted access to a plethora of new information, which compels them to transition from the conventional "learning to read" paradigm to the more contemporary "reading to learn" model. Reading to learn signifies that students' objective in reading is to acquire information. Consequently, they are required to assimilate new concepts into their existing knowledge, construct novel understandings, and modify their pre-existing conceptions, beliefs, and theories (Anggrisia & Bisriyah, 2020).

In the context of academic pursuits, reading skills assume a pivotal role, as they facilitate the acquisition of knowledge and valuable insights (Rohmana & Amalia, 2022). According to Grabe (1991), Reading comprehension is the ability of extracting and constructing meaning from a text by integrating background knowledge with the textual information. This skill is important for academic success, yet many students struggle to comprehend due to inadequate instructional methods and limited the exposures (Jimenez & Velasco, 2023). Comprehension of a text requires more than a mere reading; it demands the ability to discern the text's content from its purpose. A significant number of students face challenges in comprehending texts, and in some cases, reading activities can even induce feelings of stress and frustration, leading to a reluctance to engage with

the material (Budianto & Yuniar, 2023). These challenges highlight the innovation approaches to teach reading comprehension, especially for learners at A2 level.

Numerous studies have been researched about the role of pre-reading activity for activating prior knowledge and facilitating comprehension (Azizifar et al., 2015). For example, Yeeding (2007) demonstrated the pre-reading activities has significantly enhance motivation and comprehension among the students who are on the vocational. However many students who are still stuck on traditional methods, such as memorization and translate word for word, therefore it can be the challenges to develop their critical reading (Adawiyah, 2019). The National Standards state that students' primary problem with reading is a lack of comprehension of the text they are reading. This is based on declining student motivation because learning seems monotonous. As a result, it's essential to enhance learning techniques, especially for pre-reading in raising comprehension levels.

According to Pearson and Johnson (1972), there are several ways to implement reading comprehension, including drawing on prior knowledge, predicting, summarizing main ideas, questioning, and making inferences. One of the strategies that can be elaborate into pre-reading is QARS, which facilitate student to make the prediction by providing the structure of the text. Genuinely, QARs is a fascinating strategy for developing student comprehension at the pre-reading level. Based on Raphael T.E., this strategy is considered to be able to assist students in finding the information they're looking for by providing the structure of the text, and the details themselves are arranged, so the students can easily understand the context. In line with Syahputra et al. (2022), QARS has some advantages, not only improved the comprehension but also promote collaborative learning and critical thinking. According to Astuti (2021), utilized quantitative methods with pre- and post-tests to show that QARs significantly improved students' reading comprehension, with mean scores rising from 46 to 80.2. Furthermore, another study who conduct by Rothong (2013) with entitle "Effects of Reading Instruction Using Question-Answer Relationships (QAR) and Reading Strategies on Reading Comprehension Ability of Eleventh Grade Student" was investigated the effects of reading instruction by using QARs and other reading strategies for increasing the reading comprehension ability of eleventh-grade students. he result showed that pupils who got instruction in reading through Question-Answer Relationships (QAR) and reading strategies indicated 7 significant improvements in their reading comprehension ability when compared with the pupils who were not given QARs instruction.

In the light of several theories and studies, pre-reading activity can elaborate the students' background knowledge. Moreover, by implementing QARs (Question-Answer Relationships) can help students improve their reading comprehension. Despite these advantages, few studies have examined the integration of QARS into phases of reading, particularly at pre-reading for the A2 proficiency level. To address this gap, this study investigates the use of QARS in pre-reading activities to improve reading comprehension among A2 level students. By focusing on the pre-reading stage, this study aims to transform reading from a passive activity to an interactive and stimulating process. The novelty of this study lies in integrating QARS as a pre-reading strategy tailored to A2 level students, offering a practical approach for educators and contributing to the growing literature on reading comprehension strategies.

The following are the problems to be answered in the study:

1. Do the students who taught by using QARs at the pre-reading activity attain higher reading achievement rather the students teach by conventional learning?

Based on the problem that has been formulated. In the present study, the main objective of the study is to know whether or not the students can attain higher reading achievement by using QARs at the pre-reading activity, rather the student who teach by conventional learning.

The finding in this study, the research is expected can give a contribution theoretically and practically how to develop reading comprehension by using QARs at pre-reading activity for A2 level. For theoretically, implementing QARs as a pre-reading activity at A2 level is an effective approach for enhancing the student comprehension to acknowledge their insight, by identifying the question and answers regarding the text which relevant with pre-intermediate level. In practical terms, it is hope that this research can provide facilities and information to students and teachers on how to improve their ability to understand reading in the reading activity process. For teachers, this research can be a reference as material for improving reading strategies and determining the appropriate pre-reading activity to be applied at A2 level according to the material, through presentation slide media in offline learning. For students, it is hope that this research can help overcome the difficulty of understanding a reading text through a pre-reading activity using the QARs strategy. For future researchers, this research will be a reference for the next research, especially in developing other pre-reading activity at different levels of learners

2. METHOD

2.1 Research Design

This study employed a quantitative method with a quasi-experimental design to investigate the effectiveness of pre-reading activities using the Question-Answer Relationship Strategy (QARS) in improving students' reading comprehension. The quasi-experimental design was selected to allow a comparison between an experimental group receiving the intervention and a control group following traditional methods, without random assignment.

The researcher divided the experimental and control group who both have reading proficiency at A2 level. Then the researcher assigns each group to do pre-test for checking their reading comprehension. After following the pre-test phase, the experimental group was given the treatment process by implementing the QARs at pre-reading activity. The goal of this phase is enhancing the student reading comprehension. Later on, the last session of the treatment phase, a post-test is given to both the experimental and control groups to evaluate whether there are improvements in their reading comprehension. To ensure comparison of the subject's understanding the material before and after the intervention, the post-test is designed to be comparable to the pre-test. The impact of the treatment on the experimental group's reading comprehension relative to the control group was then determine by analyzing the post-test data.

Table 1. Design of Study

O1	X	O2
O3	X	O4

Note:

O1 = Experimental group before treatment

O2 = Experimental group after treatment

O3 = Control group before treatment

O4 = Control group after treatment

Table 1 clearly indicates there are two groups in the research conduct the pre-test and post-test. The pre-test is to determine their initial reading comprehension before the treatment was given. While the post-test is to determine their final result regarding reading comprehension after the treatment conduct.

2.2 Subject of Study

This study conducted in MAN 1 Kab. Malang. For the sample, the researcher chose eleventh grade. According Gay, Mills, & Airasian (2012) the sampling was chosen based on the judgement. Based upon the definition, the sample are taken by looking the level of reading proficiency. Where the sampling has previously been given a TOEFL test at their school. This ensured that all participants had similar reading abilities before the intervention.

2.3 Research Instrument

Research instrument is a tool or device that has been used to collect the data. In this study, the researcher is using test as instruments. The researcher provides multiple choice test to determine the efficacy of the prereading towards their reading comprehension. There are two sections test: The Pre-Test and The Post-Test. This aim to collect the relevant data from the objective research.

During the pre-test, researcher wants to measure the initial student reading comprehension before any intervention or treatment is given. In addition, it can also be a benchmark for the extent the learning process can be improved and also evaluate the effectiveness of subsequent interventions. The pretest instrument consisted of 20 multiple choices which focusing on hortatory text comprehension. These questions provide the baseline data for assessment.

Simultaneously, the post-test is conducted to assess progress in reading comprehension after implementing interventions or learning activities. Therefore, both aspects of testing have a crucial role for obtaining the important data to fulfill the research objectives. The post-test also consisted of 20 multiple choices regarding the hortatory text, this test for identifying the difference result before and after the treatment or intervention.

2.4 Data Collection

To collect the data, the researcher has an instrument that should be implemented namely pre-test and post-test. These tests comprised 20 multiple-choice questions based on hortatory texts to measure reading comprehension. The questions were validated for reliability and difficulty level to match the A2 proficiency standard.

Both of Pre-test and post-test are used to evaluate student progress. The pre-test measures students' prior knowledge before the lesson, helping teachers identify areas that need more focus. The post-test is used to assess how much students have understood after the lesson and to evaluate the effectiveness of the teaching method. These tests help teachers plan more effective lessons based on the results.

The distinct between experimental group and control group is the implementation of the treatment. The objectives to improve their reading comprehension. Therefore, the experimental group is giving the intervention in the three times. In the first meeting, the researcher invited the students for brainstorming by asking questions regarding the previous chapter. Followed the next activity, students are asked to discuss the benefits of self-reflection before reading (pre-reading). During the main teaching phase, researchers introduced QARS concepts and taught students how to analyze QARS question types to create predictive questions. Then, the researcher provided

several clues to help students make initial predictions at the pre-reading stage based on the type of QARS questions. Thus, the researcher provided a hortatory text, and invited students to compare their predictions after reading the text. Finally, at the post-teaching stage, the researcher provides feedback and summarizes the learning. As a whole, in this meeting the researcher wanted to introduce the concept of QARS that can be implemented in the pre-reading stage. This approach helps students to make predictive questions in a structured way, activating their prior knowledge, and make reflection for post-reading.

The second meeting started with a brainstorming session as in the first meeting. Next, at the main-teaching stage, the researcher divided 32 several groups. Each group was directed to prepare predictions based on the types of QARS questions that the researcher had given. Then the researcher asked the groups to exchange predictive questions to be answered. After that, the researcher then asked students to compare the results of their predictions with the information obtained through reading. The objective of this meeting was to encourage collaboration between students in understanding the text, through the prediction and analysis of QARS questions. Therefore, it can hone their critical thinking skills.

In Treatment 3, pre-teaching began by asking students questions about the material that had been learned previously. The researcher reviewed the QARS concept as well as the hortatory material as the main activity. Then asked the students to reflect on using QARS during the pre-reading stage, regarding weaknesses and advantages. As for the post teaching stage, the researcher summarizes the overall material that has been learned. Therefore, it can be concluded that the purpose of this meeting is to strengthen students' understanding of the QARS concept and its application, especially in the pre-reading stage.

Then, after applying the pre-reading activity by using QARS, the researcher is conducted the post-test. This aim as an indicator of the efficacy approach in this research. The post-test consisted of questions related to the hortatory text material that has been studied previously. In post-test stage, the researcher presents questions consisting of 20 multiple choices. The technicalities of the post-test are the same as the pre-test, students work on it within 45 minutes. Apart from that, the types of questions used are different from the pre-test but still have the same level of difficulty. Then, the final stage of the post-test is comparing the scores between the pretest and posttest.

Regarding the research design in previous state, the researcher carried out data analysis from every assessment which taken from the experimental and control groups. Later, the researcher used the statistical application program like SPSS (Statistical Product and Service Solutions) to analyze the data in question. Afterwards, the researcher analyzes the previous test results using hypothesis test, this is necessary to understand the differences scores related to students who are taught and do not use the QAR strategy during the Pre-Reading activity. Before using the hypothesis test, the researcher test the data by using the Normality and Homogeneity of Variance tests. If one of them was unfulfilled the requirement for the decision making, consequently the researcher can conduct non-parametric test namely Mann Whitney u test. The decision to use the Mann-Whitney U Test was based on the need for an alternative to parametric tests when data violate normality assumptions. A significance level of $p < 0.05$ was used to determine whether the intervention had a statistically significant impact on reading comprehension.

3. RESULTS AND DISCUSSION

The results of the pre-test and post-test for both the experimental and control groups are presented in Table 1. These results illustrate the differences in reading comprehension performance before and after the intervention

Table 2. Average score of pre-test and post-test

Group	Pre-Test Average	Post- Test Average	Differences
Experimental	72.41	89.25	+16.84
Control	70.74	76.66	+5.02

The results of the pre-test showed that the experimental group scored an average of 72.41, while the control group had an average of 70.74, indicating that the two groups had a slight difference in the reading comprehension domain. After the intervention in the experimental group, the post-test scores achieved an increase, with an average of 89.25, compared to the control group's average of 76.66. The experimental group showed a greater improvement (+16.84 p) compared to the control group (+5.92).

After analyzing the test scores both of groups briefly. Researcher conducted another test stage in order to increase the level of accuracy. The first step, the researcher examined the result of pre-reading and post-reading both of group by conducting normality test. This test was carried out to conform the data had a normal distribution. For decision making the data is said normal if P value greater than or equal to the significance level (α), 0.05. The following are the results of the normality test;

Table 2. Test of normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Preexp	.190	27	.013	.935	27	.093
Precon	.154	27	.099	.949	27	.199
Postexp	.338	27	.000	.715	27	.000
Postcon	.149	27	.127	.901	27	.014

a. Lilliefors Significance Correction

Based on the table above, the results of the significance value showed that the experimental class have 0.013, while the post-test value showed a significance is 0.00. This indicates that the pre- and post-test data for the experimental class was non-normally distributed, because the significance value is less than 0.05. Conversely, the data normality in the control class showed a pre-test significance value is 0.099 and a post-test significance value is 0.127, both of them are greater than 0.05. This indicates that the pretest and posttest data in the control group are normally distributed. Second step, the researcher was analyzed the result of post-test by homogeneity test. The objective of this homogeneity test is to identify the extent to which the data being analyzed is homogeneous. While the decision making is similar with the normality test. The result are showed in table 2

Table 3. Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
hasil belajar siswa	Based on Mean	2.319	1	52	.134
	Based on Median	2.094	1	52	.154
	Based on Median and with adjusted df	2.094	1	46.434	.155
	Based on trimmed mean	2.808	1	52	.100

Based on the table above, the results of the homogeneity using the Levene test can evaluate the resemblance of variance between the classes. Furthermore, Levene's statistical value based on the mean is 2.319 with a significance 0.134. while based on the median, the statistical value is 2.094 with a significance 0.154. based on median with df produces a statistical value of 2.094, with a significance of 0.155. while in the last section based on the trimmed mean, the statistical value is 2.808 with a significance 0.100. This can be indicated that almost all of the significance values obtained are greater than 0.05. Therefore, the variance between groups can be considered homogeneous. Thus, the assumption of homogeneity of variance is met, which is an important prerequisite for some advanced statistical analyses.

The last step was examining the hypothesis test. One of hypothesis test is a Mann Whitney U. The Mann Whitney U test or frequently referred to as a non-parametric test, is a test for comparing two independent variables to find out whether the data have identical population. This test can be utilized to substitute the T test, if the data were not normally distributed or homogeneous. Apart from that, this kind of test can be adopted when there is substantial ordinal data or numerous outliers. The objective of the Mann Whitney U test is to determine the null hypothesis (H₀) if two populations have a similar distribution, and the alternative hypothesis (H_a) if the two populations possess distinct distributions.

In light of the data non-normal or non-homogeneous distribution, the Mann Whitney U test was employed in this research. As shown by the table, the distribution of the data was not normal. As a result, the researcher selected to use this test as an alternative hypothesis test in the present study. Regarding the hypothesis results, it can be said that there is a significant difference among the experimental class and the control class, if the value of asymp. Sig. < 0.05, so H₀ (null hypothesis) will be rejected and the alternative hypothesis (H_a) will be accepted.

Table 3.Ranks

	kelas	N	Mean Rank	Sum of Ranks
hasil belajar siswa	post-test experimental	27	35.15	949.00
	post-test control	27	19.85	536.00
	Total	54		

According on the sig table for the Mann Whitney U-Test Asymp. For both of the Experiment class and the Control class, the reading Test outcome was 0.00, or beneath 0.05. H₀ (null hypothesis) will be refused attributed to the Asymptotic significance level of less than 0.05. Additionally, the alternative hypothesis, H_a, will be accepted, which indicates that the experimental class average score beyond the average of the control class. It was determined that pre-reading by using QARS significantly improves reading comprehension.

In this study, researchers utilized the Question-Answer Relationship Strategy (QARS) in pre-reading activities to improve reading comprehension among eleventh-grade students at MAN 1 Malang. The aim was to activate students' prior knowledge and introduce new information, therefore its crucial for effective reading comprehension according to Yuniko (2020). The intervention was implemented in the experimental group (XI F). The study employed an

experimental quantitative approach, comparing pre- and post-test scores between the experimental (QARS-based pre-reading) and control groups (traditional teaching). The experimental group demonstrated significant improvement with an average post-test score. This result was analysis by normality test and homogeneity test. The data for normality obtained that less than 0.05, therefore it can be conclude that the data was not normal. However, for the homogeneity test, the data obtained above 0.05 it can be said that the data was homogeneity. Consequently, the researcher conducted non-parametric Mann-Whitney U tests, used due to non-normal data distribution, confirmed these differences ($p = 0.000$). The result from non-parametric test highlighting the substantial impact on enhancing reading comprehension by giving QARS in the pre-reading activity as an intervention.

The intervention to apply QARS to the experimental group is also supported by the findings of Raphael (1986), who explained that QARS can assist in categorizing questions, helping them identify explicit and implicit information in a text. Thus, this structured approach facilitates a deeper understanding of the material, which likely contributed to the experimental group's superior performance. Similarly, Adhe Syahputra and Marzul Hidayat (2022) said that QARS can enhance active engagement and collaboration among students, by fostering thinking skills for reading comprehension. In addition, the results of this study are in line with Azizifar et al. (2015), who showed that pre-reading strategies activate prior knowledge helping to understand new information. In this study, the use of QARS-based pre-reading activities encouraged students to make predictions, activate schemas and interact with the text more effectively. This interactive approach differed from the traditional methods used in the control group, which often relied on memorization and translation, limiting students' ability to critically engage with the text (Adawiyah, 2019).

4. CONCLUSION

The study investigated the integration between QARS into Pre-Reading Activity among the students at A2 level. Based on the findings revealed, it was shown that implementing a pre-reading activity by using QARS has significant differences between the control class and the experiment class, especially in both post-tests. The result of the post-test in the control class showed an average score of 76.66, while the experimental class had an average score of 89.25. Thus, it can be concluded that the intervention can improve their reading ability. Even though there are significant score differences, both of them were above the standard minimum criteria, namely 75. Furthermore, the researcher was using an alternative test, namely the Mann-Whitney U-test; the test was indicated as Sign. (2-tailed) 0,000. If the result was lower than 0.05, it can be said that the null hypothesis (H_0) was rejected while the alternative hypothesis (H_a) was accepted. As a result, the pre-reading activity using QARS was successful in improving reading comprehension.

The research study contributes theoretically and practically regarding the study in the English academy. In terms of theory, the study was about how to improve reading comprehension. Through the application of teaching pre-reading activities by using QARS as a combining strategy, it can increase student engagement. Moreover, this research enhanced their understanding of many factors that influence the effectiveness of teaching reading. As part of that, this research finding also fosters constructivism theory in the learning process. This research also identifies the effectiveness of combining strategies, namely, pre-reading activities and QARS, such as making prediction questions and answers and small group discussions, which improve student reading comprehension.

Conversely, the practical terms highlighted the implementation pre-reading activity by using QARS. Many teachers in the English academy can adopt this strategy to enhance student reading comprehension to foster their active engagement. This strategy was not created strictly for the researcher-center method, but students can easily explore the material being taught through the pre-reading activities presented. Moreover it can encourage the students in collaborative learning. For further study, the researcher can expand QARS with different text type, proficiency level to validate the broader effectiveness, furthermore the researcher can also examine long term effect the sustained impact about this strategy.

REFERENCES

- Adawiyah, R. (2019). Enhancing students' reading comprehension of narrative text through question-answer and relationship (QAR) strategy and self-efficacy. *UIN Syarif Hidayatullah Jakarta*, 0 (0), 157.
- Anggrisia, N. F., & Bisriyah, M. (2020). Using online recount texts to improve the eighth graders' reading comprehension. *Proceedings of the 2nd International Conference on Quran and Hadith Studies Information Technology and Media in Conjunction with the 1st International Conference on Islam, Science and Technology, ICONQUHAS & ICONIST*. <http://dx.doi.org/10.4108/eai.2-10-2018.2295575>
- Astuti, Y. (2021). The implementation of Question Answer Relationship (QAR) in improving students' reading comprehension (Doctoral dissertation, UIN ARRANIRY)
- Azizifar, A., Roshani, S., Gowhary, H., & Jamalinesari, A. (2015). The effect of pre-reading activities on the reading comprehension performance of Ilami high school students. *Procedia-Social and Behavioral Sciences*, 192, 188–194. <https://doi.org/10.1016/j.sbspro.2015.06.028>
- Budianto, L., & Yuniar, R. F. (2023). The effect of suggestopedia method on Indonesian EFL learners' reading achievement. *Journal of English Language Teaching and Learning (JETLE)*, 4(2), 56-69. <https://doi.org/10.18860/jetle.v4i2.20573>
- Creswell, J. W. (2012). Educational research: Planning, conducting, and evaluating quantitative and qualitative research. Boston: Pearson Education.
- Grabe, W. (1991). Current developments in second language reading research. *TESOL Quarterly*, 25(3), 375-406.
- Raphael, T. E. (1986). Using questioning strategies to promote students' reading comprehension. *The Reading Teacher*, 39(2), 186-190.
- Rohmana, W. I. M., & Amalia, K. R. (2022). Exploring the use of narrative text in teaching reading comprehension in EFL classroom. *Proceeding International Conference on Islamic Education (ICIED), 7(Integrated Science and Religious Moderation in New-Paradigm in Contemporary Education)*, 488-496. <http://conferences.uin-malang.ac.id/index.php/icied/article/view/2043>
- Rothong, A. (2013). Effects of reading instruction using Question-Answer Relationships (QAR) and reading strategies on reading comprehension abilities of eleventh-grade students (Doctoral dissertation, Chulalongkorn University).
- Syahputra, A., Hidayat, M., & Wulandari, B. A. (2022). teachers' strategies in teaching reading comprehension through e-learning platform during the pandemic. *Edukasi: Jurnal Pendidikan Dan Pengajaran*, 51–68. <https://doi.org/10.19109/ejpp.v9i1.10901>
- Yeeding, S. (2007). Using pre-reading activities to increase learners' motivation in reading comprehension": A case of 2nd year vocational students enrolled in the Electrical and

Electronic Certificate Program at Industrial Technology College, King Mongkut. King Mongkut. Pranakorn.

Yuniko, F. (2020). The effect of activating schemata in pre-reading activity on students' reading comprehension at MAN Koto Baru Padang Panjang. *LINGUA LITERA: journal of english linguistics and literature*, 5(1), 21-41

APPENDIX I

The result of the pre-test and post test in experimental class

NO	NAME	PRE-TEST	POST-TEST
1	AZM	85	100
2	AYS	80	90
3	AN	80	95
4	AM	70	90
5	AR	65	100
6	APK	75	95
7	BPD	70	90
8	DKI	90	95
9	FZS	60	95
10	HFN	75	95
11	HA	75	100
12	KOR	85	95
13	MYA	70	90
14	MZ	85	95
15	MZA	80	90
16	MA	75	90
17	MRA	70	100
18	NZ	75	80
19	NMS	55	60
20	NTH	50	60
21	NF	65	100
22	OR	75	60
23	RJS	50	65
24	RA	80	90
25	RO	60	100
26	TII	80	95
27	ZN	75	95
AVERAGE		72,40741	89,25

APPENDIX II

The Result of Pre-test and Post-test in Control Class

NO	NAME	PRE-TEST	POST-TEST
1	ADK	70	70
2	AZA	60	95
3	AFH	60	75
4	AHS	90	85
5	AZ	70	60
6	AW	80	90
7	APR	90	95
8	APS	60	80
9	AW	80	95
10	DDPR	65	75
11	DNA	90	95
12	DM	80	90
13	KNP	85	90
14	LM	90	85
15	MBF	70	55
16	MFM	70	60
17	MI	70	90
18	MIM	65	85
19	MNFR	60	80
20	MNN	70	80
21	MNA	60	65
22	MSL	55	60
23	MFSP	75	55
24	NR	55	65
25	PPM	70	60
26	QDMA	75	55
27	VA	45	80
AVERAGE		70,74074	76,66