

# QUANTITATIVE RESEARCH SCENARIO ANALYSIS

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**Abstract:** This paper aims to have a look at quantitative research as one of the types of research in education which has been done by researchers, administrators and teachers. Three research questions are examined to see whether or not there is any correlation between classroom size, low income of the students and teacher's experience to the testing program. The finding shows that classroom size gives effects to the achievements of students (Lee, 2009, Hunn-Sunnito et al. 2001). Moreover, low income of the students also affects the student's achievement of the testing (Page, 2002). Teacher's experience as well, plays an important role to the success or failure in educational program.

**Keywords:** *Research in Education, Quantitative Research Scenario Analysis*

This paper aims to have a look at quantitative research as one of the types of research in education which has been done by researchers, administrators and teachers. Part one of this paper is introduction. Part two will show the questions based on the scenario. Part three will discuss the ethical issue. Part four will identify and classify the variables in the program. Part five is the sampling process used in the program. Part six is validity and reliability of the program. The last part of the paper is the conclusion and recommendation. There are three research questions which are proposed in this testing program.

- a. Is there any correlation between classroom size and the testing program?
- b. Is there any correlation between low income of the students and the testing program?
- c. Is there any correlation between teacher's experience and testing program?

## **The correlation between classroom size and the testing program**

As a matter of fact it is difficult to separate between classroom size and the result of the testing. Many researchers have been done by scholars toward the effect of classroom size and the result of the test. In my experience as a teacher of EFL students, I found out that the number of students in the classroom will affect the achievements of the students. In our university there are 30 to 40 students in the classroom which I think, It is not good to have such a big amount of students learning a foreign language especially when speaking and listening subjects are given.

Though we know big classroom is not suitable for the language class but the problem is there is lack of classroom provided. Based on my observation, the number of students in a language classroom is about 15 to 20 students. When we give test to those students in small and big classroom the result shows that the achievement of small classes is better compared to those who are in big classroom.

Lee (2009) did a study on the impact of class size on the rhetorical move structures and lexico-grammatical features of academic lecture introductions. The lecture introductions of small and large class were compared to see how the size of the audience influences the rhetorical and linguistic choices lecturers make in university settings. The finding showed that class size does affect lecturers' discursive decisions. Moreover, the size of the class influence the rhetorical and lexico-grammatical choices made by lecturers. Lecturers in large classes may repeat the topic of the lecture indicating their concern for students' academic success. The size of class also tends to affect lectures' use of certain linguistic elements. Lecturers of large classes tend to use certain lexical and grammatical features more frequently to build positive learning environments.

Hunn-Sunnito et al. (2001) reported the effect of classroom size on the quality of work conditions, academic achievement, and students' behaviour. The result showed that teacher workloads became more manageable, and students received more individualized attention in small class sizes compared to large class sizes. In general the students' behaviour and achievement also

improved. In large class sizes, teacher and student morale decreased along with the quality of education. Time allocation for doing task was reduced which make problems for students because there will be pressure in doing the task with limited time. To sum up, we can say that there is an effect of classroom size and the result of testing.

### **The correlation between low income of the students and the testing program**

There are some findings toward the low income of students which affect the result of the students' testing. To some extent, many researchers also claim that there is no effect of income status of the students toward their achievement. The rapid advancement of technology has become one way to improve the quality of education beginning from elementary schools until the university levels, for example we see that most of schools are provided with good quality computers, LCD's, audio recordings and so on. Computers and other classroom technologies have become an important part in education. Placing computers in the classroom seem to make good sense for administrators, educators and politicians which assume that such placements will contribute good result in educational differences (Page, 2002).

Students from high socioeconomic status are provided by their parents with good facilities to enhance the quality of their studies. Most of the students have computers, audio recordings, books, maps, and many other types of equipment. When they are given homework and other kind of assignments from their teacher they can do them better compared to students with lack of facilities. As the result they can achieve good mark at schools. However, students from low socioeconomic status are not able to possess this kind of equipment.

When we compare facilities at school in modern country and developing country are different. In a modern country like US, Canada, Australia, New Zealand, Europe, schools are flooded with many kinds of high technologies. But in developing country such as Indonesia, we can see that not all schools are provided with computers. Schools in big cities has good facilities while schools in countryside are not provided with those kinds of modern equipment. The differences of these facilities, of course will affect the achievements of the students.

Page (2002) did a research on Technology –Enriched Classroom: Effects on Students of Low Socioeconomic Status. Page (2002) did a study by comparing the attainments of elementary students in technology-enriched classroom and students in traditional classrooms dealing with the student achievement, self-esteem and classroom interaction. The subjects are 211 students from low socioeconomic status with different backgrounds, races and ability levels. From the analysis of reading scores, it is stated that there is no significant differences between the two groups. However on mathematics achievement, composite self-esteem, school self-esteem and general self-esteem the treatment group is better than the traditional group. In addition, he found out that treatment groups is being more student centred and control groups are being teacher centred.

Lehrer & Randle (1987) did a study on the use computer technology in the classroom for low socioeconomic status. They found out that there is an effectiveness of this equipment. In the treatment group the problem solving was significantly enhanced and children were more adept at learning to learn. To conclude this, we can say that there is an effect of low income of the students toward the result of testing program.

### **The correlation between teacher's experience and testing program**

Teachers play an important role toward the success or failure in educational program. Experienced teacher are reported to have differences in handling their students and classrooms compared to unexperienced teachers. To some extent, the pedagogical competence of teachers depends on their experience in teaching. Professional teachers are expected to maximally and explicitly model for their students. Teaching required skills, abilities, attitudes which need to be recognised and developed by teachers (Loughran et al, 2005).

Unexperienced teachers have less capability and competency in handling and teaching their students. When a problem appears during their teaching, they do not know how to handle and even they do not know how to overcome it. However the experienced teacher is already used to face many unpredictable problems faced by students during learning and teaching process. So, in this case we can say that there is a significant effect of teachers experience and the result of testing. To answer this question we can employ correlation analysis (Creswell, 2008).

## **Ethical issues**

As a researcher, before conducting a research ethical issues should be put into consideration. The researcher has to put the right of participant before participating in a study. Participants of the study must be informed type of study to be conducted, how, when and where the study to be conducted. All participants should be informed that their names and other identities will not be open to public. Participants have the right to drop from participating to study if they are willing to.

In this testing program, there are some issues that need to be put into consideration.

- a. There is no cause of disturbance to the schools.  
A researcher should ask the schools when the school program start and end. In this case, in order not to disturb the program of the schools, it is better to take the testing program at the end of the program. The reason for this is if the study conducted at the beginning of program it will disturb the teacher and the school.
- b. Consent from parents  
In this testing program parents should be informed because this testing is employed to young learners. Parents have to be informed that their children participated in the testing program. If parents do not agree that their children will be included in the program they have right not to allow their children to participate. Parents also have right to know about the purpose, the nature of the testing program.
- c. Result of testing  
Students and parents are informed that they have the right to know the result of the testing. If the result of the testing could not meet the target of the testing, students and parents may ask for remedial. In this case the researcher is able to give remedial to improve the students' achievement.
- d. Funding
- e. There should be information that there is some extra funding which is given by superintendent to the school which gain high scores in the testing program. Giving additional funding to several schools may result to be unfair for students. So in this case every student who participates in this testing program will get the additional funding as well without seeing the result of their achievement.

## **Variables in the Testing Program**

Creswell, 2008 identified three variables in the testing program, they are as follows: independent variables, dependent variable and extraneous variables. The independent variable is the variable that can cause or can give effect to the dependent variable. In this testing program there will be three independent variables so called students' socio economic status or condition, the classroom size and the experience of the teachers.

Moreover, dependent variable is the variable which is affected by the independent variable. In this case the dependent variable is the result of the testing program achieved by students. The other variable of this testing program is extraneous program that is the variable that cannot be controlled by the researcher. There two possibilities variables that cannot be controlled by the researchers in this testing program. The researchers could not be able to control the time allocation for study at home. Each student will have different amount of time to study. In addition, there is also an effect of the achievement if parents involve in their children' education. Time allocation given by students working at home will improve the student's ability to work with numeracy. The more the students allocate their time to study at homes the more they gain which improve their achievement at school as well.

## **Sampling Process**

In this testing program, the sample is all year five students. It seems the sample of this testing program is too homogenous because it only take year five and leaving year one until seven. Frankel & Wallen (2000) stated the good samples are selected by stratified sampling process. Since the population is more than 100 people, it is suggested to have 15-20 % of samples from level one

until seven to represent the whole school. By having this representation, it is expected that the result the test will be more valid and reliable.

### **Improving the Validity and Reliability of the Program**

Frankel & Wellen (2000) noted validity refers “the appropriateness, meaningfulness, and usefulness of the inference a researcher make”. In other words we may say that validity refers to whether the test does measure what is intended to measure. There are several types of validity such as face validity, content validity, construct validity, criterion related validity, concurrent validity and predictive validity.

Reliability refers to “the consistency of scores or answers from one administration of instrument to another”. In other words, a reliable test provides consistent measurements on repeated occasions. Reliability could be ensured through several ways, i.e. retest, the use of parallel forms, and the use of formula. To improve the validity and reliability of this testing program, we can improve the number of test items. In this testing program we can increase the test items from 40 to 80. Increasing the amount of test items will make the test more valid and more reliable. To vary the test item, we make true false, multiple choice test, close test and soon. Before administering the real test, the test must be tried out first in order to be more validity and reliability of the test.

### **Conclusion**

In line with the weaknesses of the existing numeracy test, it seems to warrant revision or replacement. In the revision the following suggestions are recommended. In the first place, a represented sample of the local teachers needs to be included. The sample could be involved in the revision or test or the development of a new test for the area. The revised or new test must be tried out in the representative sample of area. The teacher also needs to be involved in the discussion of the interpretation of the result. Miller and Grondlund (2009) stated that a) the teachers know the learning objectives that they are trying to help the students to achieve, b) they are familiar with the learning experiences that the students have experienced c) they have opportunity to observe students while they were working on an assessment task and to discuss with the students about their performances.

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