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Programmed teaching attempted by means of an experiment

Salomi Jacomina Hehanussa
Universitas Kristen Indonesia Maluku, Indonesia
*Corresponding author email: Salomihehanussa@ukim.ac.id

Syahriah Madjid
Universitas Bosowa, Indonesia
Email: syahriah.madjid@universitasbosowa.ac.id

Rihfenti Ernayani
Universitas Balikpapan, Balikpapan, Indonesia

Aa Hubur
Trisakti University, Jakarta, Indonesia

Rahul Chauhan
Parul University, India

***Abstract*---**In Indonesia, there have been many attempts to educate the nation. Efforts like that make it possible to serve the rights of the people who serve independence. Among other things, the right to get learning opportunities, as can be found in article 31 of the 1945 Constitution. If the Constitution states that such a right is the property of every citizen, this means that teaching must be equitable to all people. Equitable teaching broadly must pay attention to issues such as geographic size, equal distribution of quality, simultaneous presentation methods, and so on. Thus the effort to equalize education is something that needs to be supported not only by good faith, but also by intensive research and other concrete efforts.

***Keywords*---**teaching, research, education, school, government.

Introduction

In order to support efforts to equalize teaching in Indonesia, innovative efforts have been made since the beginning of its five-year development, including in the field of educational technology. Research and development efforts in the field of curriculum planning, teaching delivery methods and so on have also been carried

out. In 1974 after a series of seminars on how to disseminate teaching for the benefit of the masses which was held with the "Innotech Center" (Innovation and Educational Technology), an experiment was conducted on an educational presentation system carried out by the community, parents, and teachers simultaneously [1]. This is a form of research on educational technology that is relevant to the need for equal distribution of education. Officially the project is called Education for Children by Communities, Parents and Teachers, which has been shortened to the Education project.

Education Experimentation System

Many efforts are intended to fill the nation's independence. Among other things, by building roads, bridges, dams, and other physical facilities. Do not miss the efforts to build new habits and traditions, even new values. Such endeavors concern everyone: the people of that nation. Symptoms like this mean efforts to improve the standard of living of the nation [2]. One way to improve the standard of living of a nation is to educate the people. The Education system being experimented on is an education delivery system for primary education (SD). In the context of education in Indonesia, trying this system is an innovation (innovation) in the way of delivery.

Basically, this system explores a new role for teachers from teaching in front of the class to managing learning activities. As a manager, he must be able to improve his abilities, so that he is no longer limited to the usual number of 40 students, but is expected to be able to manage between 80 - 100 people. Students learn on their own using a module, which is a printed teaching unit, where lessons are structured and programmed in such a way as to include teaching objectives, material information, practice and research, as well as practicum activities, tests and feedback, as well as exams, so that the module "can teach itself". Thus the teacher can divert teaching activities into supervision activities and provide consultation to students who are experiencing difficulties [3]. Teachers who because of this new function are called "Educational Guards", are assisted by skilled personnel from the community to provide skills or skills in certain fields, assisted by the parents of students. Such learning activities are carried out mainly at levels IV, V, and VI. The term "level" here is actually just to make it easier for those who know primary school as an educational institution consisting of six levels or classes. Basically, the Education system knows no level or class. The students study modules arranged in order, from the low number to the high number. The term “Teaching Unit” is only to help indicate that a student has been in a particular Module. In this experimentation, after running since 1974, there are still many aspects that have not been completely answered. For example, how community participation can run immediately. How do learning activities according to each rhythm if carried out. How the teaching of Indonesian Language and Mathematics can be carried out by Tutors at the beginning level (this is the subject of my writing).

Teaching Units

In the experimentation of the Education system, the implementation of educational programs can be described as follows:

- Teaching units IV, V, VI.
  At levels IV, V, VI students learn on their own with Modules. The role of the tutor (Tutor) is to help students who feel that there are difficulties, to help teachers carry out tests and corrections, and to organize modules.
- Teaching Unit I-II.
  At level I and II students study under the leadership of tutors. These tutors act as little "teachers", teaching Indonesian and Mathematics. They teach based on the “Teaching Guide” (Teaching Guide), which contains what to teach, and how to teach them. The teacher here has the function of training the tutor and supervising him, as well as helping students in the early stages of entering school.
- Teaching Unit III.
  At level III students experience a transition period from Programmed Teaching (the teacher teaches based on a program that has been compiled) to Programmed Learning (the student learns from programmed learning materials. In this case the student is guided directly by the Teacher.

From the above description, it can be argued that the research carried out is the problem of using Programmed Teaching techniques by children (grades V and VI) in the experimentation of the Education system as an alternative technology for educational equality. From the above description, it can also be emphasized that the position of this study, namely the Programmatic Teaching experiment, is a sub system of the whole Education system [4]. As a sub-system research, the main idea is basically the same as the Education system. And the implementation of this sub-system also depends on the implementation of the Education system as a whole. Its role will also be part of the Education system that functions within a larger system, namely the education system in Indonesia.

Education delivery system

The need for a delivery system that enables the implementation of educational equality is the main problem in this paper. What already exists in the education community in Indonesia is the delivery system which we know as the “Elementary School” schooling system in which the teacher delivers lessons classically [5]. This system, because it has long been used in Indonesia, is often called traditional. Meanwhile, several other delivery systems that are considered innovative have also been tried, including the Education system as described above. By focusing on the Education system as an innovative effort in working on the Primary School system as a traditional business, the problem at hand becomes clear, namely which of the two systems of dissemination is more effective? In this paper the problem is limited in terms of effectiveness, namely the ability to increase learning achievement. Thus it is hoped that the introduction of the quality aspects of this system will facilitate further efforts in the form of experiments to use it [6].

So in this paper the Education delivery system with "Programmatic Teaching", and the Traditional system (which we call non-Education, to facilitate) are two things that will be compared. Student achievement will be the data to be analyzed. The Education system and the non-Education system, respectively, with their teachers, namely Tutors for Education and Teachers for non-Education, are things (variables) whose effects will be seen. The Tutors category is

Proficient, Medium, and Less Proficient Tutors; while the Teachers are Proficient, Moderate, and Inadequate Teachers. And because learning achievement basically depends or is also influenced by intelligence, the intelligence of these students is the second (variable) that is taken into account. This intelligence variable is categorized into High, Medium, and Less. Thus the problem to be discussed can be formulated as below, namely whether there is a difference in the influence between the Programmatic Teaching delivery system / the Education system and the Traditional teaching delivery system / non-Education system on student achievement in the fields of Indonesian and Mathematics studies in relation to with teaching competence and student intelligence? This discussion is based on the author's experimental report on second grade students [7].

Factors Involved in the Study

Because this discussion looks at differences in influence, in other words comparing the effects of one system with another, the problem solving is done by conducting experiments. The experiment will look for a cause-and-effect relationship between the factors of the Education and Traditional delivery systems, each presented in front of the students by the Teachers, namely the Tutor in the Education system and the teacher in the non-Education system, with student learning outcomes [8]. Tors that factor is a factor treatment, while the learning outcomes will be seen in the framework of the category of intelligence, which is a classification factor. Thus this experiment is a multi- factor experiment [9]. Strictly speaking, experiments with three factors.

By paying attention to the factors involved in this study, the authors conducted a literature study in order to find a theoretical basis, to then propose a hypothesis. It turns out that the experimental results show that Programmed Teaching is suitable for Mathematics, while for Indonesian it is only the same when compared to traditional systems [10]. This is evident from statistical analysis with three-factor analysis of variance, on four Education SD and four non-Education SD. The data is collected by several instruments such as: 1) Learning Outcomes Test, to collect data about student learning outcomes; 2) Observation Guidelines, to collect data about the tutor's proficiency in carrying out his duties as a teacher; 3) Questionnaire, to collect data about teacher experiences; 4) The EPPS (Edwards Personal Preference Schedule) test, to collect data on the teacher's persistence and neatness, and together with number three (Questionnaire) will be used to classify the teacher's condition; 5) Test "CPM" (Children Progressive Matrices), to collect data on the intelligence of children.

Conclusion

The benefits of this paper can be viewed from several points of view:

- From the point of view of the Education system
  From this point of view it can be stated that the results of this study constitute the theoretical basis for the research and evaluation results of the Education system experimentation. The Education system experiment that was carried out was a research and development project that prioritized

operational work: a variable was tried out, developed, until its operational form was created.
In such an effort, whether a variable has a theoretical basis or not does not really matter. The important thing is to run well. Thus, in terms of the development of science, the data found through descriptive data collection and evaluation cannot be said to be sustainable with the bodies of knowledge in the form of theories that are already in the treasures of science. The results of Education's research can be viewed as a continuous development of science. This paper is expected to have scientific value in the sense of presenting a theory that is supported by data.

- From a scientific point of view
  From this point of view, it can be argued that in fact the "programmed teaching " system, which in this study is a package called a teaching-learning strategy, is also a combination of various theories. This combination is more of an interdisciplinary work. I think it can be called in this combination the theory of developmental psychology, learning theory, educational technology, curricula, have been related in such a way, so that each theory will not only be tested but also have a wider context. At least as it starts with the variables that are included in the design. Thus, in turn, further research for various branches of science will be held. Such a thing would be a prospect that is very good for this kind of study. If the prospects are even more so, then there is no doubt about the benefits of this study which has been in the form of an essay for the development of science in Indonesia.
- From a development point of view in Indonesia
  By mentioning development in Indonesia we cannot be separated from Peli ta III onwards (at the time this article was written). This study, which is a sub-system research of the Education system, has a role to play against the Education system as a delivery technique adapted to the regional conditions that need it. In development in Indonesia, various technologies are urgently needed to support or even support big plans such as compulsory education plans. Even if the term which is now well known is only "the problem of learning in nature", then with this study the concept of "compulsory teaching" can be generated.

We are familiar with the get for "Chase" for people outside of school; we are familiar with the “KKN” program at universities; and we also know the movement "ABRI enters the village". Aren't they the potential teachers in the areas where they move? What is their mainstay in being able to teach well (say "good" in quotes), if it turns out that there are no teachers in that area, while the community needs them? This study is an attempt to assess a way of teaching and teaching materials that are programmed in such a way, so that it becomes a teaching guide that can be used by anyone after getting enough training. So the prospect and the benefit is a battle between the obligation to study and the obligation to teach that may arise.

In addition, programming technology seems to be increasingly becoming a popular alternative in a country where the population is so rapidly developing, and is scattered in overseas areas such as Indonesia. It is the task of experts to think and act immediately and not to overcome the explosion of prospective

teachers at various levels of education in Indonesia. Thus, the distribution of education in Indonesia can run smoothly. Thus the paper concludes by emphasizing that programmed teaching which has been attempted by means of an experiment, even though it has passed a case at a particular location, provides signs of its potential for use in the educational equality movement.

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