

# IMPROVING THE QUALITY OF LEARNING MATHEMATICS THROUGH INNOVATIVE LEARNING MEDIA

**Sigit Dwi Laksana**

Universitas Muhammadiyah Ponorogo, Indonesia

sigitciovi@gmail.com

**Abstract.** As a hope for an educator so that children can become children of his protégé. An educator is the most important part of which is inseparable from the process of learning. The results of the learning process depend very much on the role of teacher, teacher/educator designing, executing and evaluating. In order to make the learning process can be run with a maximum of and in accordance with the goal of educators so teachers can use the learning tool, in this case, is the medium of instruction. Lots of media types there are learning at school, of which simple or complicated. But many teachers who are encountering less innovative and creative in terms of learning media, and produced illustrations for designing learning media is very important and necessary by the teacher since by doing development as well as innovate can improve student learning and desire a great fit with the needs of the students. Therefore researchers interested and doing research on quality improvement of learning with innovative learning media. This research aims to develop the creative power of teachers to continue to create media innovative and creative learning.

**Keywords:** Quality Learning, Mathematics, Learning And Innovative Media.

Teaching and learning are a valuable educational activity. The value of educational coloring interactions that occur between teachers with learners. The interaction can be educational value due to the teaching and learning activities that are undertaken by teachers geared to specific objectives have been formulated before the teaching is done, that no other i.e. to achieve the goal of education. Teachers plan their teaching activities knowingly (learning) systematically utilize everything to the importance of teaching because of the learning process is an important part of educational activities.

The learning process of children age SD/MI basically has thought that is concrete, integrative, and hierarchical. Concrete is meant as a learning process should proceed from the concrete things/real: that can be seen, heard, touched, smelt, and tampered with. Integrative medicine is meant as a State in which the child is looking at something that is studied as a unit, they haven't been able to sort out the concept from a variety of disciplines. While hierarchical means that children learn to develop gradually starting from the simple things to the more complex things.

Learning is supposed to be is a process of change in personality in the form of skills,

attitudes, customs, cleverness and are settled in the behavior that occurs as a result of practice or experience that they can. The success of the learners in teaching and learning activities can be affected by two factors, namely the internal factors and external factors. The first is internal factors or factor that comes from within is a quality learning, leisure, pleasure the learners themselves to learn. The second is external factors or factors of learners, in this case, that is becoming very important external factors are teachers, where teachers should strive to design and create an atmosphere of learning in accordance with the ideals and objectives of the learning in the classroom.

Designing and creating an atmosphere of comfortable learning can improve the quality of a study. The importance of maintaining quality in the learning process cannot be denied again its benefits because by keeping quality in learning activity learners will affect the quality and results of the study. As a teacher who is a professional and highly dedicated should be able to choose and design the good learning activities as well as a set of learning tools even what that is in the learning activities, such as models, methods, and media learning, so that later on the process of learning can take place and produce a

maximum of quality and quality learning for learners. Improved quality of learning can be done with designing learning devices or what is in it, one of which is by designing the learning media.

A phenomenon that researchers examine the current large number of teachers who are less innovative and creative in designing the learning media. The media are a tool provider here media is any object that can be manipulated, see, hear, read or spoken with the instruments used for learning activities. Learning media is a trivial thing but have the very outstanding magnet in attracting interest in learning and motivate children in learning. Learning media users should be adjusted with the subjects, themes and basic competence that exist, as well as the need to adapt to the needs of learners. In addition, it should also pay attention to the State or condition of learners, learning materials, as well as the learning resources available, so that the use of these learning media can be applied effectively and can support the learning success of learners. So from here on will be increasingly apparent that the success of the learning process is largely influenced by the way of teaching. Whereas the characteristics of successful teaching and learning, one of which was seen from the levels of student learning activities. "The higher the higher the student learning activities also opportunity successful teaching. This means teaching activities should stimulate students to do a variety of learning activities". It is not just as a theory only, many of which have been proved by designing learning, able to improve the quality of learning, such as research conducted by Point Haryati lecturer PKn FPIPS IKIP PGRI in Semarang and Noor Rochman S-2 Students of the Semarang State University, with the title of the improved quality of learning through practice of citizenship learning PKn (Project Citizen), research was carried out in 2012.

According to the results of this study showed that the quality of Learning Project using model with PKn Citizen increased. Before the researchers hold a research note that the quality of learning PKn before using the model Project Citizen. With the quality of learning percentage 52%. However, after the use of model Learning Project Citizen instructional quality percentage increased to 81% (very good). The average increase in the quality of learning of 29%. This

shows that the use of Project learning model of Citizen learning can improve the quality of the results. PKn such research can be drawn the conclusion that basically all the difficult subjects if designed to make students become spirit.

The phenomenon shows the tendency of learners at this time i.e. lazy or tired to follow the lessons because teachers are less creative and innovative in designing learning media, especially for subjects which are a matter that requires learners to engage actively in it. In this case, the subject is mathematics. Mathematics is one of the subjects taught at the level of the MI/SD where it discusses the many materials that are split. It's what makes the majority of the students are lazy to learn and understand the material, whereas in everyday life we are always faced with things that smelled of mathematics, such as calculation of selling, measurement, multiplication, and so on. With the use of innovative learning, media can make mathematics into subjects that endeared and not the dreaded subjects. At one elementary school that existed in the area of Boyolangu Subdistrict Kab. Tulungagung has implemented learning activities by using innovative media in teaching mathematics, especially grade 5, the varied ways that are utilized to make the learners into eager to follow the learning activities. This makes researchers feeling interested in conducting research at the school.

Based on the above background in General, the formulation of this problem is to know (1) the use of innovative learning media, (2) improved a quality of learning mathematics with innovative media, and (3) innovative learning media can increase the interest and taste of happy learners.

## **METHODS**

In this study researchers using qualitative research approach, i.e. the researchers intended to disclose symptoms in holistic-contextual (thoroughly and in accordance with the context of/for what it is) through the collection of data from the scientific background as the source directly with instrument key (key instruments) are the researchers themselves. This type of research is the research field, with its focus on improving the quality of learning, the

utilization of innovative learning media in Elementary School.

Next in data collection using in-depth interview techniques researchers (in-depth interview) against the stakeholder Elementary School in Boyolangu Tulungagung that researchers make as an object of research include, namely the teacher grade 5, other teachers, school principals, as well as learners. With the in-depth interview, a technique is expected to gain good experience in terms of exposing the application of innovative learning media from the data that the researchers want.

Next observation techniques, this type of observation is observation participants namely by observing all the activity of the teachers and students during mathematics learning activities with innovative learning media, in this study the researchers present on-site research to observe what is happening with the use of observation guidelines in the form of sheets of observation and note field (Field Note) to facilitate researchers in writing the results of the observation.

The technique used is the engineering documentation. This technique is used to gather information about the management of madrasah, in the form of a written document in the form of archive data, school-related data required by the researchers. In terms of interpretation and the withdrawal of the conclusions researchers using qualitative data analysis model flows from Miles and Huberman that include 3 things:

1. Data gathering (Collecting Data)

Data collection was undertaken at the moment before doing research (pre-research) until the end of the study. A tool used to dig the data by using a variety of methods of which include interviews, observation, and documentation. As for the required data include learning activities by using innovative media, to other physical evidence.

2. Reduction of the data (Data Reduction)

Reduction of data means to encapsulate, choosing things, focus on the things that are important. Thus the data that has been reduced would give a clearer picture, and facilitate researchers to conduct data collection and facilitate the next researcher to make conclusions which can be accountable.

3. Presentation of Data (Data Display)

Presentation of data can be done in the form of a short blurb, chart, the relationship between categories. The presentation of the data used in this research is data with the text in the form of a narrative.

4. Draw conclusions (Conclusion Drawing)

At the conclusion of this withdrawal activity performed are providing a conclusion against results of data interpretation. Conclusions in this study are findings. The findings could be a description/description of an object previously is still unclear, so after researched it became clear.

For more flow model jeans a flow from Miles and Huberman, described as follows:

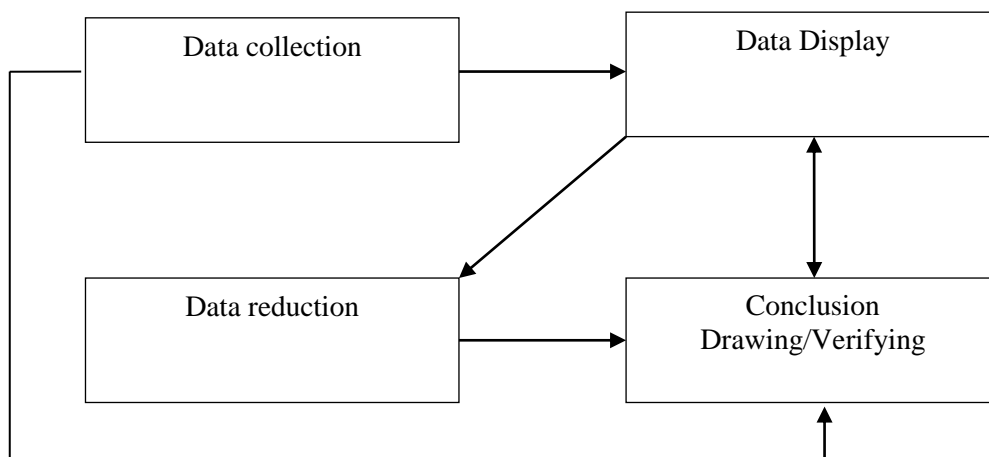


Chart 1. Analysis Of Data Flow Model, Miles And Huberman

## RESULTS AND DISCUSSION

### RESULTS

Research that has been done by researchers about 4-5 this month, starting February to June results according to what became the research objectives. The research results will be researchers describe as follows:

1. The application of innovative learning media use study of Mathematics Learning meaningful and gives the impression to the learners are able to connect the experience already owned by them and combine it with what they earn through the learning process. And learning is said to be meaningful if what is delivered by teachers can be understood by the learners. This is sometimes still is insignificant by the teacher. Most teachers less so think about the depth and strength of the material is absorbed by the learners, their target was just to hammer out material that was already planned in the RPP. It is so wrong and needs to be straightened out. Teachers also often ignore the use of the media, thus with media atmosphere of learning to be more full of life and feels the spirit. This is what encourages researchers to dig up data about some schools that did apply learning with the use of the media, some schools acquired more inclined to teach with the Lecture course. After making preliminary studies researchers obtain data quite interesting in one elementary school in Boyolangu, Tulungagung, namely SDN 1. Their teachers together with students create media innovation from goods that are unused, though it looks simple but is able to evoke the atmosphere of learning learners become more alive. The teacher invites students to create a media group, telling them to bring goods from home. by the time researchers visited the location of research to dig up data from the principal or the teacher of class 5 obtained data that the utilization of media more fixed on mathematical subjects. It is indeed undeniable that according to most of the children say that math was boring, especially it is in grade 5, where the material has begun to elaborate and complex, about volume, area, until the FPB and KPK.

According to Suharno utterance, s. Pd as the head of the school said that learning math is processed 5 becomes the most sought after lessons and acceptable to children, "they always look forward to the lessons of Mathematics", said Mr. headmaster. The argument is reinforced with answers grade 5 teacher Mother Sri Sulastri, s. Pd who said that "the children always ask taught mathematics, they want to play while learning", "I am most like if teaching children mathematics with innovative media educational comics" added Bu Sri. From the explanation Mrs. Sri, researchers felt attracted to the words of the comic.

Researchers feel less satisfied and want to try to prove what is said to be the principal and teacher five, then researchers do collecting data by using triangulation source, where the results to match she gets off the principal and the teacher of class 5, then researchers conduct interviews in depth to 3 children/learners grades 5 chosen at random, the initials RS, MHI , AA. This random selection based on skill level and the results of learning skills. Of the conversation to the 3 children of researchers makes a great one conclusion that they liked math lesson because according to them, the lesson of maths is fun, there are a lot of characters that are entered in each media comics, and I loved it.

2. Increase the quality of learning mathematics with innovative media  
The quality of Learning is one of the indicators of a healthy learning activities process. Healthy here means conditioning and also the quality of a study for the better from year to year. Based on the results of the application of innovative media use in class 5, proving the existence of an increase in terms of interest and quality of learning. And to prove it researchers conduct interviews, observation and check out some of the data value. based on the results of the in-depth interviews with principals and teachers showed that there is an increase in the quality of learning enough significance. Even the headmaster himself recounted that once was nearly all children starting from class 1-4 get the value of mathematics poor, the

next step on 5th grade little by little there is an increase in the results of the study.

Things in shows that understanding of the materials the students started well and growing. Judging from the quality of learning mathematics is also getting better and Nice from the years ago judging from some of the UTS and the UAS continues to increase. From the corner of the classroom learning and governance, children can be conditioned and so enthusiastic to follow every learning process.

### 3. Improved quality of learning and study mathematics in children with innovative media

Research was conducted intensively by digging the data field without involving the team. So the process of data mining is carried out independently, with the digging data accurately and thoroughly. In week 2 in may, researchers come back for conducting research, since at that time the process of teaching activities a little loose due to the holding of activities will the UAS. Mathematical subjects taught 3 times in one week IE Monday, Wednesday, and Thursday. Each lesson lasts about 3 hours. Researchers came to the school on Wednesday, may 04, 2016. Researchers intend to do the observation in the classroom and deliberately to get entered in the lessons of mathematics, its objectives, namely to know enthusiastic and also effective learning. Each process researchers follow and author data sheet with the observation that research already provides, and for things that are not present in the observation sheet researchers wrote in the logbook (field note).

The activities of some of the researchers get results and the results of researchers in depth analysis. The results of the analysis showed that the level of motivation of learners is increased with marked enthusiasm in following lessons, fell spirit in the task, as well as views of the value of good mathematics

## DISCUSSION

Discussion of the results of research that has researchers described above will be discussed as follows:

1. The application of innovative learning media use mathematics Implementation/application is as an overall

effort, means, techniques, and methods to encourage the members of the Organization in order to be sincere and willing to work well for the sake of achievement of the goals of the Organization efficiently, effectively and economically. Implementation of learning (actuating) is an activity to realize the performance or the appearance of the work of the human resources in the Organization to carry out the program.

The learning process is an important part of educational activities. The learning process is an attempt to achieve the goal of education. Educational purposes will not be carried out without the presence of a learning process. Teachers and pupils (learners) are 2 essential elements of a learning activity. A teacher should have competence-competence and superior quality in order to create an atmosphere conducive to learning and fun. One of the competencies that must be owned by a teacher is mastering all of the subject matter and make the surrounding objects as learning AIDS (props). Where the functions of its implementation are the achievement of a specified organization. Based on information from informants found that:

- a. The Elementary School in Boyolangu, Tulungagung is
  - 1) grade 5 Teacher did the learning process in accordance with the planning.
  - 2) grade 5 Teacher prepares the media prior to the learning process.
  - 3) grade 5 Teacher did the learning process with props or the media.
  - 4) an atmosphere of classrooms is seen conducive when teachers practice props.
  - 5) presence of demonstrations, discussions, and presentations while learning process.
  - 6) Students are excited when the learning process as well as enthusiastic in terms of doing the demonstration.
  - 7) the existence of initiatives from teachers to replace the props while getting material that could not be explained with props, such as finding images on the internet.

From some of the results above indicate the media learning provide understanding to

learners become better because of the benefits of the media as a Dayton Kemp and expressed in the quotation by the Etin Solihatin Raharjo and identify some of the benefits of the media in learning as follows.

- a) Convey the subject matter can seem.
  - b) the learning process becomes more clear and interesting.
  - c) the learning process becomes more interactive.
  - d) efficiencies in time and effort.
  - e) improve the quality of student learning outcomes.
  - f) Media allows the learning process can be done anywhere and anytime.
  - g) Media can foster students ' positive attitudes towards the material and the process of learning.
  - h) change the role of the teacher toward more positive and productive.
2. Increase the quality of learning mathematics with innovative media.

The improvement of the quality or the quality of learning is inseparable from the role of a teacher. It has been discussed before that the success of a learning at least influenced by 5 key components, namely: (1) teacher, (2) Media sources and Learning Environment, (3), (4) and (5) the student learning process.

The first is the role of the teacher, the teacher is the determinant of success, the teacher as a facilitator and as a mediator. The role of the teacher is very important, less innovative teachers who will be teaching is not for the benefit of participants of his protégé, but only for personal interests. The second is a media, the role of the media is not less important, the use of media should be based on a few things. According to Azhar Arsyad, in the selection of media should consider:

- a. the ability to compute the exact stimulus presentation (Visual or radio)
- b. recommendable the right stimulus presentation (Visual or radio) oKemampuan accommodate the right student response (written, audio, or physical activity)
- c. the ability of computing balikdKemampuan computing feedback.

To choose the mainstream media and media secondary to exercise and test (preferably exercises and tests using the same media). The next third is

environmental, a conducive learning environment can affect the learners themselves. Their mind is much calmer and no abstract. The learning climate that is conducive to make the flow of learning becomes easier. The four are students/learners, the role of students as subjects of study as decisive due. Each learner has certainly some characteristics that range from visual, audio, up to the kinesthetic. With the diversity of teachers should be able to use the appropriate learning strategies. The fifth is the last process of learning, which is the set of activities that occur between teachers with learners. Synonymous to what researchers explain that has learning conducive climate capable of influencing achievement, a learning process is targeted and well structured.

3. Improved quality of learning and study mathematics in children with innovative media

Of course with learning that is meaningful for learners to make teachers become more excited to teach again. The key is that the teacher is able to motivate learners to keep the result. The granting of this motivation is very important all, the motivation was the deciding factor and function gives rise to and directs the Act underlying the study. Motivation can determine both whether in achieving the objectives so that the greater their motivation will be an even greater success, it appears, did not want to give up, actively learning to improve learning achievement. Motivation can arise from within themselves motivation or learners of but also arise from outside myself a student or the so-called extrinsic motivation. Things happening in the SD is a form of giving of the motivation of a teacher. The learning experience of students continues to be gotten and excluded so that the learners able relate the experiences already gained with the new learning experience.

## CONCLUSION

The application of learning mathematics 5th grade by using innovative media is one way that can be used to improve the quality of learning, the learning of mathematics in class 5 includes material that is difficult enough if the learners do not heed seriously. There are some media that can be utilized in the process of

learning one of the exploited in Elementary School is a medium of comics. Any comic that is used is not the usual comics circulating in society, but the comic is a comic type education, as the real enthusiasm of learners is very high and learning is quiet and lively.

In terms of improving the quality or the quality of learning is inseparable from the role of a teacher. It has been discussed before that the success of a learning at least influenced by 5 key components, namely: (1) teacher, (2) Media sources and Learning Environment, (3), (4) and (5) the student learning process. It is appropriate and what is applied in the SDN Boyolangu 1. Furthermore, there is an increasing interest and achievement in terms of learning, the learning atmosphere. The teacher always motivating learning laptop because the granting of motivation is very important all, the motivation was the deciding factor and function gives rise to and directs the Act underlying the study.

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