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Efforts to Increase Learning Outcomes Using Kinesthetic Auditory Visualization Model

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ABSTRACT

This study aims to: (1) improve science learning activities using the Kinesthetic Auditory Visualization Model, (2) improve the results of science learning using the Kinesthetic Auditory Visualization Model. The method used by researchers is to use a classroom action research (CAR) design that attempts to solve or answer the problems faced in the current situation. The subjects in this study were all fourth grade students of SDS Muhammadiyah Plus Kapuas Regency which consisted of 12 students, 7 men and 5 women. For data collection techniques used are observation and tests. While in this study using qualitative and quantitative data analysis. The results of this study indicate that there was an increase in the activities and learning outcomes of science in fourth grade students of SDS Muhammadiyah Plus Kapuas Hilir Subdistrict, Kapuas Regency in the academic year 2016 / 2017. This can be seen from: 1). The activity of students is better in science learning in the subject matter of animal classification using the VAK learning model in fourth grade students at SDS Muhammadiyah Plus Kapuas Regency 2016/2016, this can be seen from the increase in activity from cycle I which only gets average scores - classically average 2.5 with poor criteria and in the second cycle increased in good category with a classic average of 3.5. 2). There is an increase in science learning outcomes of the fourth grade students of SDS Muhammadiyah Plus Kapuas Regency in the academic year 2016/2017 with the acquisition of the pre-test getting an average score of 25.4 with completeness in classical 0%, while the average score of students in cycle I research is 58.3 with completeness in classical 42% and in the second cycle the classical average value increased to 81, with 100% classical completeness.

Keywords: Learning outcome, model, kinesthetic auditory visualization, KAV

INTRODUCTION

Science is still a difficult subject for most students in Indonesia, including elementary school students. Science is an important subject, difficult to be accepted and understood by students. If a student is confronted with certain material while he is not ready to understand it, then he will not fail in learning but learn to frighten, hate and avoid the lesson. Not all students can easily accept the lessons delivered by the teacher. There are some participants who have understood the subject matter and some who have not been able to understand it.

The difference in understanding of students then there is a distance between those who understand and those who do not understand. This happens because teachers more often do conventional learning that makes monotonous so that students are happier with the way the teacher teaches various subject matter. The teacher lacks variation in learning in teaching. There are students who easily accept lessons and there are students who find it difficult to accept lessons with only lectures conducted by the teacher.

So that the learning process can accommodate knowledge with all students well, it can be applied Visualization Auditory Kinesthetic Model (VAK). Kineticetic Visualization Auditory Model (VAK) has enough creativity to provide an explanation and make students feel curious about the lesson. This is also reinforced by the results of interviews with fourth grade teachers saying that the delivery of subject matter more often uses the method of lecture and rarely uses teaching aids or learning models so that students are better.

Education provides a very large contribution to the progress of a nation. Through education, the Indonesian people can free themselves from ignorance, backwardness and can develop human resources so that they can increase their confidence to compete with other countries. Education that is developed is education that can develop the potential of the community, is able to foster a will and can

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arouse motivation to explore potentials and develop them optimally to develop in their entirety and comprehensively.

The implementation of education, especially formal education takes place in the school environment. Education in schools is one of the tri education centers. This should be really noted by the teacher. So the teacher must really carry out their duties as well as possible. In carrying out their duties, the teacher should plan learning well. Education is the most important thing in life. Many things are obtained from education. Good about skills, personality, attitude values, knowledge and so forth. In the field of education that plays an important role in particular the learning process by teachers.

Sardiman (2006) explained that learning is always a change in behavior or appearance, with a series of activities for example by reading observing, listening, imitating and so forth. Sugihartono, et al (2007) learning is a process of gaining knowledge and experience in the form of changes in behavior and the ability to react relatively permanently or permanently because of the interaction of individuals with their environment.

Hilgard (Nasution, 2000) says learning is the process of giving birth to or changing an activity through training (whether in a laboratory or natural environment) that is distinguished from changes by factors that do not include exercise such as changes due to intoxication or drinking marijuana not including learning outcomes.

According to Purwanto (2010) learning outcomes are the results achieved from the teaching and learning process in accordance with educational objectives. Learning outcomes are measured to determine the achievement of educational goals so learning outcomes must be in accordance with educational objectives.

With the end of a learning process, students get a learning outcome. Learning outcomes are the result of an interaction of learning and teaching actions. Based on the description of learning according to the experts, it can be concluded that learning is a process of activities in the form of reading, observing, listening and imitating the results of which can change behavior or behavior so that the same change does not occur again and again in every new situation. The change in question must lead to a change that is better than the state before learning.

According to Gagne (2012) explained that the learning objectives provide a view of learning from back to face. The main reason for this view is that we remember what is the end of learning. Learning objectives according to Sardiman (2006) are reviewed in general, then there are three types of learning objectives namely (a) to gain knowledge, (b) inculcation of concepts and skills, (c) the formation of attitudes.

To get knowledge depends on the ability to think because the ability to think will enrich knowledge. While inculcating a concept or formulating a concept, it also requires a skill. The skills themselves can be educated with a lot of ability training.

In developing mental attitudes, behavior and personalities of students, a teacher must be wiser and more careful in his approach. A person's attitude will be influenced by the attitudes of others he often meets or idolizes.

The three learning objectives above in teaching are three things that are planning and programmatically separate, but in reality in students will be a unified whole and round. All three of them in teaching and learning activities, each planned according to the items of learning material.

Learning is forming a fixed state of the student. After knowing the meaning of learning, it will be revealed what is the learning outcome. Sudjana (2005) states that student learning outcomes are essentially changes in behavior and as feedback in an effort to improve the teaching and learning process.

Measurement, evaluation and evaluation are hierarchical. Evaluation is preceded by assessment, while assessment is preceded by measurement. Based on some of the opinions of the experts above, it was concluded that learning outcomes are abilities possessed by students after receiving their learning experience.

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These abilities include cognitive, affective, and psychomotor aspects. Learning outcomes can be seen through evaluation activities aimed at obtaining proof data that will show the level of students' ability to achieve learning objectives. In this study the researchers emphasized cognitive learning outcomes. The instrument used to measure student learning outcomes on cognitive aspects is a test.

IPA can be defined according to its function. In this case Bernal has mentioned two very important functions of science that are to increase production and to change the attitude of human and natural outlook. The science functions to change the attitude of humans towards the universe and can be described as follows: In the past people believed that a rainbow was an angel with IPA that people understood that the rainbow was a habit of light spots of water in the air.

When translated freely the meaning is roughly as follows: Science is a collection of theories that have been tested for truth that explain the regularity patterns of natural phenomena that are closely watched. From some of the above meanings of science, it can be concluded that science is a science concept that studies the natural environment and its contents.

There are three main types of learning modalities, but it often happens that a child has a combination of several learning modalities. The first learning modality is the Visual learning modality, for example reading a book, seeing a teacher's demonstration, seeing the greatest examples in nature or natural phenomena by observation, or seeing learning presented through TV or video tapes.

The second learning modality, namely Audio learning modality, a child will learn more easily by listening. Here the application of lecture, question and answer and discussion methods are more effective. Students can learn through listening to educational radio, learning tapes, video tapes, the third learning modality is kinesthetic learning modalities, students learn through physical movements. For example, by walking, moving your feet or hands, doing experiments that require physical activity and so on. (Sumani, 2011).

Although most people have access to the three VAK modalities, almost everyone tends to one of the learning modalities which acts as a filter for learning, processing, and communication. People not only tend to one modality, they also utilize certain combinations of modalities that give them certain natural talents and flaws. (Porter, 2010).

VAK learning model is a learning model that optimizes the three learning modalities to make students feel comfortable. This learning model is a child of the Quantum learning model that is principled to make the learning situation more comfortable and promises success for students in the future.

In VAK learning, learning is focused on providing direct and fun learning experiences. Direct learning experience by learning by remembering (Visual), learning by listening (Auditory) and learning by movement and emotions (Kinesthetic).

Your way of learning is the result of a combination of how you absorb, then organize and process information. Verbal cues (visual, auditory and kinesthetic) can help you find your learning modality in the wrong direction, so you need to know the characteristics of each of these verbal cues. Are you or someone included in the visual, auditory and kinesthetic groups. Different activities require different ways of thinking. So the advantage is to know, first, which is your dominant way and second what you can do to develop another way of thinking in yourself. (Riyanto, 2010).

The characteristics of students who are more dominant have a visual learning style such as glancing eyes upward when speaking and speaking quickly. Children who have a visual learning style must look at the body behavior and facial expression of the teacher to understand the subject matter. Students tend to sit in front so they can see clearly. Students think using images in the brain and learn faster by using visual displays such as diagrams, picture books, and videos. In the classroom, visual children prefer to take notes to the details to get information. (Colin and Nicholl, 2002).

Visual acuity, although more prominent in some people, is very strong in everyone. The reason is that in the brain there are more devices for processing visual information than all other senses. (Meier, 2002: 97). The characteristics of students who are more dominant have auditory learning styles such as a glance of the eye towards the left / right, horizontal when speaking and mediocre. For this reason,

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teachers should pay attention to their students to their hearing devices. Children who have an auditory learning style can learn quickly by using verbal discussion and listening to what the teacher says. Auditory children digest meaning conveyed through tone, sound, pitch (high and low), speed of speech, and other auditory matters. Written information sometimes has minimal meaning for auditory children. Children like this can usually memorize faster by reading texts aloud and listening to tapes. (Colin and Nicholl, 2002).

Our auditory thoughts are stronger than we realize. Our ears continually capture and store auditory information, even without us knowing. And when we make our own sounds by speaking, some important areas in our brain become active.

In designing lessons that appeal to strong auditory channels in learners, look for ways to get them to talk about what they are learning. Have them translate their experiences with sound. Have them read aloud dramatically if they want. Invite them to talk as they solve problems, make models, gather information, make work plans, master skills, make reviews of learning experiences, or create personal meanings for themselves. (Meier, 2002).

Learning through physical activity and direct involvement. A student prefers to handle, move, touch and feel / experience his own body movements (hands-on, physical activity). For kinesthetic students, learning must experience and do. The characteristics of students who are more dominant have a kinesthetic learning style such as a glance of the eye down when speaking and speaking more slowly. Such children find it difficult to sit quietly for hours because their desire for activity and exploration is very strong. This learning style student learns through motion and touch. (Colin and Nicholl 2002: 130).

According to Porter (2010), encourage students to apply all of these methods in learning. You might also want to tell parents about the child's learning type and teach them strategies that support the learning style.

RESEARCH METHOD

The study was conducted at SDS Muhammadiyah Plus Kapuas Hilir Kuala Kapuas with the research subjects being Grade IV students. The reason for conducting research at SDS Muhammadiyah Plus is because at SD there are learning problems that need to be investigated, namely the low learning outcomes of Natural Sciences (IPA) in this school.

This research uses Classroom Action Research (CAR). Classroom Action Research is a systematic study conducted in improving practice. Practice in education by taking practical action and reflection of these actions. According to Kemmis and Mc Taggart (2012), classroom action research done through a dynamic and complementary process consisting of four essential "momentum", namely "Preparation of plans, actions, observations, reflections".

The presence of researchers is very necessary in every activity at the research site because the researchers act as planners, implementing actions, observers, reflectors and as reporters of research results. As the subject of the action giver, the researcher acts as the teacher or teacher of the model in charge of making the lesson plan (lesson plan) while simultaneously delivering teaching material during the learning process. In addition, researchers also collect and analyze data and report on the results of research.

Researchers collaborate with class teachers of Natural Sciences (IPA) to act as observers who are in charge of collecting data on the learning process, before observing observers are trained in order to understand the learning of Natural Sciences using the scientific approach that is applied along with the material taught.

Planning is developing a plan of action that is critical to improving what has happened. The class action research plan should be structured and in terms of definition it must be prospective for action, the plan must look forward.

The CAR plan should be flexible enough to be adapted to unexpected effects and unseen obstacles. Planning is based on the problem and hypothesis of the action being tested empirically so that the

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expected change can identify aspects of the PBM results, as well as uncovering the supporting and inhibiting factors of action implementation.

This action is the application of the plan that has been made can be in the form of an application of learning models that aim to improve and perfect the model being implemented. These actions can be carried out by those directly involved in implementing a learning model whose results will also be used to improve the implementation of the task.

Observation serves to document the effect of related actions. These observations are oriented towards the future, providing the basis for present reflection, even more so when the current round is running. Careful observation is needed because actions will always be limited by the state of reality, and all these obstacles have never been seen clearly in the past. Observations need to be planned and jufa based on openness of views and thoughts and are responsive.

Reflection is remembering and pondering an action exactly as recorded in the observation. Reflection seeks to understand the processes, problems, problems, and real obstacles in strategic action. Reflection considers the various possible perspectives in a situation and understands the problem and the circumstances in which it arises. Reflection (contemplation) is an activity of analysis, interpretation and explanation (explanation) of all information obtained from observations of the implementation of actions.

RESULTS AND DISCUSSION

Planning the first cycle of learning is carried out by selecting a learning model that is suitable for learning to classify animals so that students can learn well. Next is compiling the Learning Implementation Plan (RPP), preparing assessment instruments and also preparing collaborators. The researcher also prepares student activity activity sheets and teacher activity activity sheets which will be filled by observers. The learning cycle I was carried out in one meeting. Researchers as well as implementing learning are assisted by a teacher as a collaborator who will help observe and record events or findings during the learning process. In this observation activity the researcher and observer provide an assessment of the results of observations by referring to the format that has been prepared by the researcher. In this observation activity the researcher will explain the results of the observation through an observer format table to the activities of the teacher and students during the learning process lasts until the final activity.

Table 1: Calculation of learning outcomes.

No.	Learners Code	KKM	Max Score	Value
1	DS	65	100	60
2	FDP	65	100	60
3	FR	65	100	70
4	MT	65	100	40
5	NA	65	100	70
6	RI	65	100	60
7	SS	65	100	60
8	UK	65	100	70
9	HA	65	100	10
10	NAS	65	100	70
11	AG	65	100	60
12	MRK	65	100	70
	Total		700	
	Average		58,3	
	Max Value		70	
	Min Value		10	
	Complete		5	
	Not Complete		7	
	% Complete		42 %	

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Based on the results of the calculation of learning outcomes, it can be seen the completeness of student learning outcomes in post-test cycle I was 42%. Based on table 12 it can be seen that the results of the Natural Sciences evaluation of 12 students in the first cycle showed that the average value of the class reached 58.3. The highest value is 70 while the lowest value is 10. Mastery learning reaches as many as 5 students or 42%, while incomplete learning is 7 students or 58%.

The evaluation of natural sciences in the preliminary data increased after the first cycle. The increase was seen from the average class which was originally 25.4 to 58.3. While mastery learning has increased from 0% to 42%. However, the improvement in the IPA evaluation results of students in the first cycle has not reached the success indicator that has been set, namely 85% of students who experience completeness so that it still needs improvement.

Table 2: calculation of average

No.	Name	KKM	Max Score	Value
1	DS	65	100	70
2	FDP	65	100	80
3	FR	65	100	70
4	MT	65	100	80
5	NA	65	100	90
6	RI	65	100	80
7	SS	65	100	90
8	UK	65	100	80
9	HA	65	100	70
10	NAS	65	100	90
11	AG	65	100	90
12	MRK	65	100	80
Total			970	
Average			81	
Max Value			90	
Min Value			70	
Complete			12	
Not Complete			0	
% Complete			100 %	

Formula:

$$M = (\sum x) / n$$

$$= 970/2 = 81$$

Based on the results of the calculation of the average (mean), it can be seen the average value of students in the post-test cycle II is 81.

Calculate the percentage of students mastery learning classically, where the indicator of mastery learning that is used is 85% with the formula:

$$TB = (\sum s \geq 65) / N \times 100\%$$

$$= 12/12 \times 100\%$$

$$= 1 \times 100\%$$

$$= 100\%$$

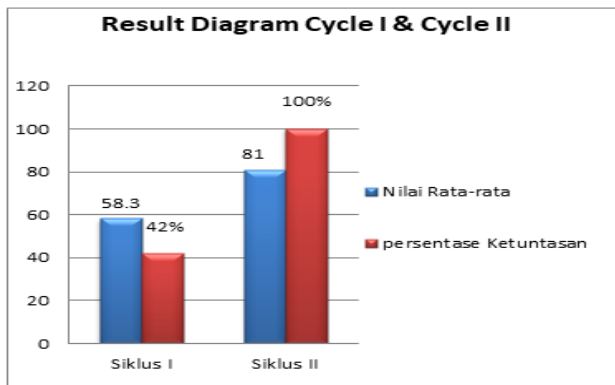
Based on the results of the calculation of learning outcomes, it can be seen the completeness of student learning outcomes in post-test cycle I is 100%. It can be seen that the results of the IPA evaluation of 12 students in the second cycle showed that the average value of the class reached 81 The highest value was 90 while the lowest value was 70. Completion of learning reached as many as 12 students or by 100%.

the first cycle has increased after the second cycle. The increase was seen from the average class, which was originally from 58.3 to 81. While the mastery learning increased from 42% to 100%. So, efforts to improve student learning outcomes that have been set is 85% of students who have mastery. so, this research is said to be successful and will be stopped in cycle II. Thus the implementation of the action in this study no longer needs to be revised to carry out the next cycle or in other words this research can be stopped in the second cycle.

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Diagram 1: Result Diagram Cycle I and Cycle II



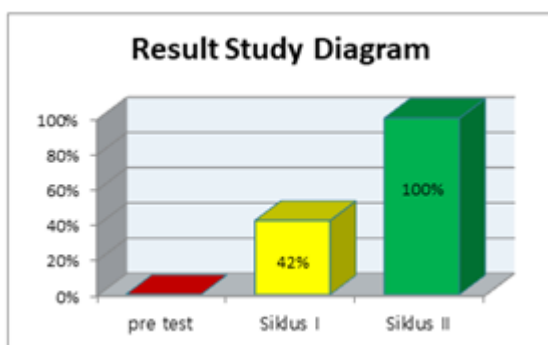
Qualitative data acquisition to support the hypothesis of learning activities, based on observations in cycle II obtained an average of observer ratings of 3.5 with the category of "good". It can be concluded that the activities of students look active when participating in science learning with material classifying animals using the VAK model.

Quantitative data acquisition supports the hypothesis of student learning outcomes improvement using the VAK model. the fourth grade students at SDS Muhammadiyah Plus. The acquisition of learning activities has increased from the first cycle with an unfavorable category with an average of 2.9 with an increase with an average acquisition of 3, 5 with a good category.

Acquisition of student learning outcomes with an average of students in the first cycle that is 58.3 and in the second cycle has increased with an average value of student learning outcomes of 81. The classical percentage acquisition in the first cycle is 42% and in the second cycle experienced increase to 100%.

Based on the description above, the hypothesis formulation that has been made can be tested for accuracy by comparing research results in the form of both qualitative and quantitative data.

Diagram 2: Result Study Diagram



Based on the diagram above, the results of the initial data, the first cycle, and the second cycle showed an increase in learning outcomes in science lessons material classifying animals using the VAK model for grade IV students at SDS Muhammadiyah Plus. It can be seen that in the preliminary data students only get an average value of 25.4, this value is still less than the completeness criterion of 65. The student's completeness learning outcomes are only just getting a value of 0%. This value is very far from the complete completeness criteria where the specified value is 85%. Then in the first cycle the average value of students increased to 58.3, this value still has not reached the minimum completeness criteria determined by schools which is 65 with a classical completeness of 42%, still not reaching 85%. So researchers must optimize the learning process again in cycle II and in cycle II obtain an average value of 81, this value has increased from the previous action and the classical completeness reaches 100%. Based on these results there has been an increase in learning outcomes of science material classifying animals using the VAK model from the initial data to cycle I by 42% and from cycle I to cycle

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II by 58%, so it can be seen that the use of the VAK model in science lessons can improve science learning outcomes in the fourth grade students of SDS Muhammadiyah.

CONCLUSIONS

Based on the results of research and discussion, it can be concluded that there is an increase in science learning activities and learning outcomes for grade IV students of SDS Muhammadiyah Plus Kapuas Hilir District Kapuas District in the 2016/2017 academic year after participating in science learning using the Visualization Auditory Kinesthetic (VAK) model, the researchers conclude:

1. Student activities both in learning science on the subject matter of animal classifications using the VAK learning model in grade IV students at SDS Muhammadiyah Plus Kapuas District 2016/17 Academic Year, this can be seen from the difference from the initial conditions where the activities of students are not good, in cycle 1 there was an improvement in activity but not maximized which was maximized in cycle 2 it was seen from the increase in observations from cycle I which only got an average value of 2.5 classically with unfavorable criteria and in cycle II it increased in the good category to an average - the classical average is 3.5.
 2. There is an increase in science learning outcomes of students of grade IV SDS Muhammadiyah Plus Kapuas Regency in the 2016/2017 academic year with the acquisition of pre-test scores an average of 25.4 with a classical completeness of 0%, while the average score of students in the study the first cycle was 58.3 with a classical completeness of 42% and in the second cycle the average value classically increased to 81, with a classical completeness of 100%.
1. Based on the conclusions of the results of the study, to improve learning activities and learning outcomes of Science using the Visualization Auditory Kinesthetic Model (VAK), researchers provide the following suggestions:
 1. The principal should consider the Kinesthetic Visualization Auditory (VAK) model as input or supervision for school teachers.
 2. Teachers are advised to apply the Visualization Auditory Kinesthetic (VAK) model as an alternative model of natural science learning, especially in classifying animals. That is because the Visualization Auditory Kinesthetic (VAK) model has been proven to be able to improve students' learning activities and science outcomes.
 3. It is hoped that activists in the education world will be able to use the Visualization Auditory Kinesthetic (VAK) model as one of the further research materials so that it can be further improved and utilized as a learning model used in other subjects.
 2. The researchers would like to extend their gratitude to Dean Faculty of Teacher Training and Education Muhammadiyah University of Palangkaraya for their support, and to those who have supported the researcher to continue working in the field of educational research, hopefully the results of this research can be useful for the community, especially the innovators and experts education.

REFERENCES

- Colin & Nicholl. (2002). *Man, play, and games*. Urbana Chicago: University of Illinois Press.
- Kemmis & Mc Taggar. (2005). *Rancangan Penelitian*, Bandung: PT. Raja Rosda Karya.
- Munir. (2008). *Curriculum-Based Information and Communications Technology*. Bandung: Alfabeta.
- Nasution. (2000). *Psikologi Pendidikan Dengan Pendekatan Baru*.
- Porter. (2010). *Information Systems Today: Managing In the Digital World*. London: Pearson.
- Purwanto. (2008). *Pengantar Penelitian Pendidikan*. Jakarta: Kencana.
- Riyanto. (2010). *Showing Seeds Technology Education*. Jakarta: Prenada Media.
- Sardiman. (2015). *Teori belajar dan Pembelajaran di Sekolah Dasar*. Jakarta: Kencana.
- Sudjana. (2005). *Belajar dan Faktor-faktor yang Mempengaruhinya*. Jakarta: Rineka Cipta.
- Sugihartono. (2013). *Pengembangan Tes Diagnostik dalam Pembelajaran*, Yogyakarta: Pustaka Pelajar.
- Sumani. (2011). *Multimedia Tools To Increase Competitive Advantage*. Yogyakarta: Andi.