THINK TALK WRITE METHOD IMPLEMENTATION TO IMPROVE REASONING SKILL

Prasetyo Widyanto[1✉], Wahyudi[2], Endang Indarini[3]

[1]PGSD-FKIP, Universitas Kristen Satya Wacana, Salatiga, Indonesia

Info Artikel	Abstrak
	This research aim is to improve fourth-grade students' reasoning skill by using Think Talk Write method implementation. This research type was using Classroom Action Research (CAR). The research subject is the fourth-grade students at SD Negeri Jetak 01 in 2017/2016 academic year. Data collection technics are used observation, reasoning skill rubric assessment, and reasoning skill test. The research result is, Think Talk Write method is able to improve students' reasoning skill in thematic learning about 18.7 % from Pre Cycle to Cycle I. The reasoning skill test mean at Pre Cycle is 67.4 (in Fair category) and increased to 76.7 at Cycle I (in Average category), then it more increased to 86.1 (Good category) at Cycle II.

INTRODUCTION

Individual abilities are an important component that needed by all people to be able to survive from world's selection in this 21st century. The effort to improve the standard and quality of each individual is through their metacognitive development its self. Metacognitive is individual thinking skill about what they know and didn't, also about how to organize and control their thinking process (Mahdavi, 2014). Metacognitive allows individuals to control their cognitive process through the metacognitive strategy that starts with planning, supervising, and evaluating (Anderson & Kathwohl in Bahri and Corebima, 2015). Through metacognitive, it is expected to be able stones for an individual to step on it when they solve a problem in their life. This was supported by Dawson (in Azizul Ghofar Candra & Wicaksono, 2016), who stated that individual who has good metacognitive development will be able to solve their problem, making a right decision, and think critically.

Individual ability to solve their life problems is not caused by metacognitive only but also caused by their reasoning skill. In line with that, Joanne K. Robbins (2011) explained that reasoning is the main element in problem solver that involved stimulus manipulation to align between alternatives with solutions to solve a problem. When individuals are in need a problem-solving situation, at that time the reasoning skill is star-ting to working in their minds. The higher reasoning skill will impact to increase accurately problem-solving skill.

Based on the observation that researcher did in SDN Jetak 01, Kecamatan Getasan, Kabupaten Semarang, it was showed that reasoning skill in fourth-grade students at SDN Jetak 01 is in fair category. This was supported by 15 students, there are still 10 students who couldn't reach Minimum Grade Criteria (the minimum grade criteria in school is 68) in reasoning skill test. Those data are showed that there is a problem happened in fourth-grade learning activities at SDN Jetak 01. The reason factor is the students couldn't able using reasoning with the optimum in their learning, because the lesson doesn't focus on student-centered yet. The students aren't involved directly in learning or thinking activities, so the students couldn't get a room or space to develop their reasoning skill.

The effort in solve the described problem above is needed Think Talk Write method implementation on fourth-grade learning process at SDN Jetak 01. The principle of the researcher chose Think Talk Write method is, Think Talk Write method start with showing students' involvement in thinking process through a book, picture, or video which is communicating with presentation and discussion result report (Suyatno, 2009). Through Think, Talk Write method, the learning is held fully focus on student-cente-

✉ Corresponding author :
    Address: Jl. Diponegoro 52-60, Salatiga 50711, Indonesia
    Email   : 292014027@student.uksw.edu

red, while the teacher act as a guide, mediator, and facilitator. The students will be trained to be able to think critically, creative, good reasoning and socialization. Think Talk Write method is an innovative learning method that emphasizing on the learning activities must be appropriate with the goal. It is not only by listening or visual learning but be able to do by thinking, talking, and writing. This was supported by Martinis Yamin & Bansu I. Ansari (2012), stated that Think Talk Write method start with thinking, talking, and writing process. This method is able to grind the students' problem solving and reasoning skill, and also improve their interest who will affect their test results. This also supported by I Wayan Puspa Wiadnyana (2013), based on his research there is a students' interest enhancement learning through Think Talk Write method implementation.

The Think Talk Write is a learning method that direct the students to learn by individual or group. This method consists of thinking, talking, and writing process that makes the students be able to involve fully in that process. The Think Talk Write method does with give them a problem in a book or reading text. Problem stimulus will invite them to think individually about anything there on the reading text and write it on a small note. The students then bring out their thinking results in their groups to have a discussion and collaborating each student in one group. Next, the students processing and write discussion results and knowledge that they got on their own note.

Through the given topic on Think Talk Write syntax, the students have to use their common sense and analyze the problem on that topic and find a truth through their reasoning skill. Additionally, by building their knowledge by themselves affected by their reasoning skill. In line with that, Presilia (2017) agreed that reasoning skill is expected to improve if they are able to construct their own knowledge by their own understanding. Through the Think Talk Write method, the students get chances to dig up their reasoning skill potential.

Keraf (in Suharman, 2005) explained that "reasoning skill is a thinking process to get a conclusion through known facts connection". Additionally, according to Hosnan (2014), reasoning skill is getting a conclusion process through logic and systematic thinking process based on observed facts. Based on experts' ideas, reasoning skill is a thinking skill that connecting each fact with other facts. If it is connected in the education world, those facts are phenomena in students'

lives that connected with the learning materials. That kind of lesson planning absolutely needed integration each learning subjects hat known as integrative thematic learning.

integrative thematic learning is a learning that integrating many learning subjects become a whole unity that possibly makes the students to dig up meaningful concepts actively (Rusman, 2010). In line with that, Permendikbud (The Education and Culture Ministry Rule) Number 67 the Year 2013 explained that integrative thematic learning is a learning approximation in the thematic form that consists from many integrated competitions. Through that curriculum, the students will be pushed to become smart, creative, productive, innovative, and affective person also good character through spiritual, social, knowledge, and skillful. Based on those explanations, integrative thematic learning is a complex learning approximation. It means, one theme consists of many learning that gives the students meaningful learning experience. Each theme must have attitude, learning, and skill competition on each learning in the related theme. There is that competention on each learning, the students are expected to become a productive, smart, and good characters person.

Based on explanations above, the research aim is to improve fourth-grade students of SDN Jetak 01 reasoning skill with Think Talk Write method implementation. But, there is a difference between this research and the formerly research. The researcher did Think Talk Write method to measure the students reasoning skill and do an assessment of students' reasoning skill in their learning. The research benefit is to gives knowledge charity in improving learning quality with Think Talk Write method to improve students' reasoning skill.

METHOD

This research was used one of type education research, Classroom Action Research (CAR). This research was done collaboratively by the teacher with the researcher (Suharsimi, 2006). Classroom action research is divided into four activities, they are (1) Action Planning, (2) Action performing, (3) Observation, and (4) Reflection. All those activities are one cycle and do repetition (Kemmis and Mc Taggart in Suharsimi, 2006). The research subject is fourth-grade students at SDN Jetak 01, Kecamatan Getasan, Kabupaten Semarang. Fourth-grade students quantity SDN Jetak 01 as many as 15 students, consist five boys and 10 girls. This research object is to improve fourth-grade students' reasoning skill at

SDN Jetak 01. The research variable including X variable, that is Think Talk Write method and Y variable that is reasoning skill.

The research data collecting technics are using observation, the assessment rubric, and test. The research data collecting instrument is the observation to observe wisdom ness of Think Talk Write method syntax, assessment rubric to measure the students' reasoning skill as long as the learning goes on, and test to measure students' ability after they learned. Reasoning skill test that tested to the students is analysis test. The reasoning skill test questions are referring to Higher Order Thinking Skill (HOTS) Questions Arrangement Modul that publish by General Directorate of Elementary and High Education (2017). Reasoning skill test questions in this research are on second and third levels, that is application and reasoning levels. Third level questions (reasoning) include analyzing (C4) and evaluating (C5). Achievement indicators will be achieved if, in reasoning skill test, the students average achieve 80. Validity and reality were tested by using SPSS 16 application.

The research data was analyzed by counting the students' reasoning skill test mean, reasoning skill category, achievement percentage each reasoning skill aspects. Based on reading skill that stated by Ennis (in Muhfahroyin, 2009) and Lawson, Alkhoury, Benford, Clark, & Falconer (in Sutarno, 2014), the researcher concludes that reasoning skill aspects in this research included topic analysis, facts collecting, arguments construction, and conclusion decision making. Defining average grade of each reasoning skill category referring to assessment guideline that has been firmed by Elementary School Creation Directorate (2016) that is, reasoning skill category define using the formula :

Predicate Range =(Maximum Grade-KKM)/ (Predicate Amount (except D))

Minimum completed grade or (KKM) at SDN Jetak 01 is the minimum grade for C category. Therefore, reasoning skill category can be seen on this table.

Table 1. Reasoning skill category

Grade	Category
$90 \le A \le 100$	Very Good
$79 \le B < 89$	Good
$68 \le C < 78$	Average
< 68	Fair

RESULT AND DISCUSSION

This research result explaining about achievement percentage data of each reasoning skill aspects and students' reasoning skill test mean from Pre Cycle, Cycle I, and Cycle II. The research beginning condition is the students' reasoning skill test average only reach 67.4 (Fair category) as a consequence of fairness students' thinking chances. Based on observation data and reasoning skill test result, they show a cause and effect relation between learning chance and students ability, that is the fairness of students reasoning skill was caused by the fairness students' chance to thinking.

Think Talk Write method implementation on Cycle I and Cycle II, students' reasoning skill be through increase significantly. The students reasoning skill increase from Cycle I to Cycle II, those were seen from achievement percentage is increasing in each reasoning skill aspects. Achievement percentage on each students' reasoning skill aspects at SDN Jetak 01 showed in this table.

Table 2. Each Students' Reasoning Skill Aspects Achievement Percentage Comparison

Reasoning Skill Aspects	Achievment (%)		Result
	Cycle I	Cycle II	
Topic Analysis	71.7	81.7	Increased
Fact Collecting	71.7	80.0	Increased
Argument Construction	76.7	83.3	Increased
Conclusion Making	78.3	85.0	Increased
Average	74.6	82.5	Increased

Based on table 2, it was seen that each students' reasoning skill aspects achievement was increased from Cycle I to Cycle II. Topic analysis aspect was increased amount 10 % from Cycle I to Cycle II. Fact Collecting aspect on Cycle I was amount 71.7% and increased amount 8.3 %, so this aspect percentage was reached to 80 %. Argument Construction showed improvement amount 76.7% become 83.3%, so it was increased amount 6.7%. Conclusion making aspect also increased amount 6.7% from Cycle I to Cycle II. Those each aspects percentage improvement also affected on reasoning skill aspect achievement from 74.6% to 82.5.

After did Cycle I and Cycle II learning, the students did reasoning skill test. Students' reasoning skill test result on Cycle I and Cycle II was showed an improvement. Below is students' reasoning skill test result mean comparison table at SDN Jetak 01.
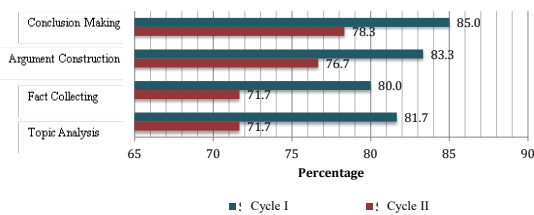
Figure 1. Each Students' Reasoning Skill Achievement Percentage Comparison

Table 3. Students' Reasoning Skill Test Result Mean Comparison

Cycle	Test Result Mean	Category
Pre Cycle	67.4	Fair
Cycle I	76.7	Average
Cycle II	86.1	Good

Based on table 4.13, it was seen reasoning skill test result mean is increased amount 9.3% in Pre Cycle to Cycle I. Same thing also happened on Cycle I to Cycle II, that is increased amount 9.4%. Clearly, below is students' reasoning skill test result mean improvement table at SDN Jetak 01.
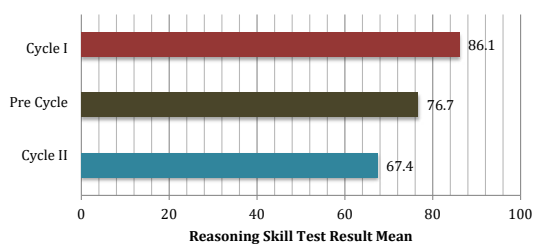

Figure 2. Reasoning Skill Test Result Mean Comparison

Based on picture 2. Showed that reasoning skill test result means on Pre Cycle only amount 67.4 (Fair category) and on Cycle I amount 76.7 (Average category). The students' reasoning skill test result means is increased to achieve 86.1 (Good category) on Cycle II. Therefore, this research has fulfilled success indicators that are the students' reasoning skill test result mean amount 86.1 or more than 80.

This research was applying thematic learning that integrated two subject lessons, that are Indonesian and Science lesson. Indonesian subject lesson discussing intrinsic elements (text content, characters, and moral value), whether science subject lesson is discussing power influence about things movement. Indonesian lesson topic served in reading text. Each paragraph in the reading text is implied intrinsic elements

and kinds of power influence about things movement, so the students have to analyze and reasoning from the reading text. Therefore, the students are able to learn two subject lessons in one thematic lesson.

Thematic learning that did by fourth-grade students at SDN Jetak 01 used Think Talk Write method. The students read and analyzing reading text about intrinsic elements and kind of things movement power influence, these learning steps were done on Think stage. Based on their findings, they discuss and collaborating with their group friends on Talk stage. Discussion result and students collaborate in the group, written by students with write based on their own understanding and language on Write stage.

Based on research result at SDN Jetak 01, know that there is an achievement percentage improvement in reasoning skill aspect and students' reasoning skill test result mean from Pre Cycle to Cycle II. Reasoning skill aspect achievement percentage is observed as long as the learning goes on using reasoning skill assessment rubric. Reasoning skill test result mean measured using reasoning skill test that did after learning.

This research facilitating the students in reasoning skill development through Think Talk Write learning. Therefore, Thematic lesson plan arranged based on 2013 Curriculum Operational Verbs (OV). Indicators development in Thematic lesson plan on third Basic Competencies (knowledge) covers identifying (C1), outlining (C2), finding (C3), analyzing (C4), constructing (C5), while fourth Basic Competencies (skill) consist making (P5), and presentation (P5). Those indicator developments are appropriate with 2013 Curriculum principle that start learning from basic things into a complex.

Based on achievement percentage of each students' reasoning skill aspects, achievement percentage of each reasoning skill aspects Cycle I to Cycle II did enhancement. Topic analyzes aspect did enhancement from 71.7% on Cycle I to 81.7% on Cycle II, while Facts Collecting also there is a percentage enhancement on Cycle I to Cycle II, that is 71.7% became 80%. Arguments Construction aspect showed enhancement percentage from Cycle I to Cycle II with percentage amount 76.7% became 83.3%. percentage enhancement also happened on Conclusion Making Aspect, from 78.3% on Cycle I became 85% on Cycle II.

Based on students' reasoning skill test result at SDN Jetak 01, on Pre Cycle reasoning skill test result mean only 67.4 (Fair category).

This happened because as long as the lesson, the students were not using their optimum thinking skill in understanding the learning materials. However, the significant change happened after the students learned with Think Talk Write method learning. Cycle I and Cycle II lessons use Think Talk Write method, be able developing the students' reasoning skill through Think, Talk, and Write stages. The result is, the students' reasoning skill test result mean was better on each cycle.

Reasoning skill test result mean achieved 76.7, so included in an Average category. Reasoning skill test result enhancement also happened from Cycle I to Cycle II. On Cycle II, reasoning skill test result mean amount 86.1 and include to Good category.

The students' reasoning skill test result mean enhancement is affected by many reasons. They are, indicators development based on Operational Verbs (OV), Think Talk Write method and the students' reasoning activities. Those reasons have the important role in determining learning achievement. Reasoning activities in Think Talk Write did by the students through think, talk, and writing activities.

Thinking activity on Think stage, the students were trained to topic analyzing and facts collecting based on the reading text. The students are able to deeply thinking about the problem topic, so they are able to write their ideas and answers possibility from that topic. This is in line with Wiwik Sudarmiyati (2016) research, that think is a decision making activity by formulating the explanations, synthesizing, and ends with conclusion making after through considering the process. The students' success in topic analyzing and facts collecting based on third BC (knowledge) indicators development, that is finding (C3) and analyzing indicator (C4).

After thinking process learning stage, the students build their arguments in their group discussion on Talk activity (Talk Stage). This stage gives fourth grades students of SDN Jetak 01 a chance to distributing their ideas, exchange with other friends and discussing how to solve the problem. Talk stage is based on third BC (knowledge), that is constructing indicator (C5).

Think and Talk stages are guide stages for the students construct their own knowledge. Additionally, the students are able to understand the learning materials into their optimum ability. They also got chances to involved in their learning, so they are able to develop their reasoning skill. This is appropriate with Joanne K. Robbins (2011), who stated that reasoning process happened when if the teacher provides think activity in the classroom. Think and Talk activity is exist to solve the problem, will giving stimulus for doing reasoning skill. This was supported by Presilia Aditya Perta, Irwandi Ansori, and Bhakti Karyadi (2017), stated that students' intellectual development will be developed if the students participate actively and involved in the cognitive process.

The last is Write stage, the students constructing their own knowledge to solve topic/problem and conclusion making to the topic/problem based on topic analyzing, fact collecting and argument constructing. The students do conclusion making activity based on making indicator (P5) on fourth BC (skills) in written mind map form. The students writing became a benchmark, are they able to understand the learning materials to their optimum ability. This is in line with Herman Budiyono and Puji Tri Aryanti (2016) research who stated that a person reasoning skill determines writing result quality. Many ideas or statements that saved in someone's mind will be communicating easy and smoothly to other people if that person has good reasoning skill. Presilia Aditya Perta, Irwandi Ansori, & Bhakti Karyadi (2017) stated that the students' reasoning skill will be increased if they are ably constructing their own knowledge through their deep understanding.

The students' reasoning skill rest result means has achieved the planned target. Think Talk Write method implementation be able increasing the students' reasoning skill. Herliani (2013) stated that, Think Talk Write method is a method that trained the students to think creatively and critically through stimulus questions. Other ideas from Siwi Purwanti, Supriyono Koes Handayanto, & Siti Zulaikah (2016) stated that higher reasoning skill, concept understanding to other concepts will be higher too.

CONCLUSION

Based on discussion and data analysis result above, it was concluded that Think Talk Write method implementation in thematic learning is able to enhance the students' reasoning skill ability at SDN Jetak 01. That enhancement was affected by Think Talk Write method implementation in the learning process. The students' thinking skill is trained on Think stage, for they are able to analyze and collecting relevance facts based on appropriate topic. Talk stage is training the student's ability to construct and communicating their arguments to other students. Based on discussion result, the students write their

own knowledge based their own understanding and language. Those three processes are able developing the students reasoning ability.

The students' reasoning skill test result means on each Cycle was increased. First, reasoning skill test result on Pre Cycle was only achieved 67.4 (Fair), then enhanced on Cycle I became 76.7 (Average), and on Cycle II also increased became 86.1 (Good). Second, the enhancement also happened on the students' reasoning skill aspects achievement mean on Cycle I and II, that is 74.6 became 82.5.

The students have to do Think Talk Write thinking process and participate actively in the learning. The teacher will be better to implement and apply innovative learning method/model and involve the students to improve the students thinking skill. Think Talk Write a method is an option for the teacher in implementing an innovative learning method. Think Talk Write method be able became as supervision in arranging the teacher competence enhancement program in implementing learning models.

REFERENCES

Arsad Bahri & Aloysius Duran Corebima. (2015). The Contribution Of Learning Motivation And Metacognitive Skill On Cognitive Learning Outcome Of Students Within Different Learning Strategies. *Journal of Baltic Science Education*, 14 (4), 487-500.

Azizul Ghofar Candra & Wicaksono. (2016). Perbandingan Kemampuan Kognitif Dan Metakognitif Mahasiswa Dengan Gaya Belajar Yang Berbeda. *Media Penelitian Pendidikan* , 10 (2), 142-153.

Direktorat Jenderal Pendidikan Dasar dan Menengah. (2017). *Modul Penyusunan Soal High Order Thinking Skill (HOTS).* Jakarta: Direktorat Jenderal Pendidikan Dasar dan Menengah Departemen Pendidikan dan Kebudayaan.

Direktorat Pembinaan Sekolah Dasar. (2016). *Panduan Penilaian Untuk Sekolah Dasar (SD)*. Jakarta: Direktorat Jenderal Pendidikan Dasar dan Menengah Departemen Pendidikan dan Kebudayaan.

Herliani. (2013). Penerapan Model Pembelajaran Kooperatif Tipe Think Talk Write (Ttw) Dalam Upaya Meningkatkan Hasil Belajar dan Kemampuan Berpikir Kritis Siswa Pada Mata Pelajaran Biologi Di Sma Negeri 8 Samarinda. *Seminar Nasional X Pendidikan Biologi* , 10 (1).

Herman Budiyono & Puji Tri Aryanti. (2016). Pengaruh Penerapan Model Peta Konsep Dan Penalaran Terhadap Kemampuan Menulis Esai Mahasiswa. *Jurnal Bahasa dan Seni*, 44 (1), 86-98.

Hosnan, M. (2014). *Pendekatan Saintifik dan Kontekstual dalam Pembelajaran Abad 21*. Bogor: Ghalia Indonesia.

Kemdikbud. (2013). *Lampiran Permendikbud Nomor 67 Tahun 2013*. Jakarta: Kementerian Pendidikan dan Kebudayaan RI.

Mahdavi, M. (2014). An Overview: Metacognition in education. *International Journal of Multidisciplinary and current research*, 2, 529-535.

Martinis Yamin & Bansu I. Ansari. (2012). *Taktik Mengembangkan Kemampuan Individual Siswa*. Jakarta: Referensi.

Muhfahroyin. (2009). Memberdayakan Kemampuan Berpikir Kritis Siswa Melalui Pembelajaran Konstruktivistik. *Jurnal Pendidikan dan Pembelajaran* , 16 (1), 88-93.

Presilia Aditya Perta, Irwandi Ansori, dan Bhakti Karyadi. (2017). Peningkatan Aktivitas Dan Kemampuan Menalar Siswa Melalui Model Pembelajaran Siklus Belajar 5E. *Diklabio: Jurnal Pendidikan dan Pembelajaran Biologi*, 1 (1), 72-82.

Robbins, J. K. (2011). Problem solving, reasoning, and analytical thinking in a classroom environment. *The Behavior Analyst Today*, 12(1), 41.

Rusman. (2010). *Model-model Pembelajaran*. Jakarta: PT. RajaGrafindo Persada.

Siwi Purwanti, Supriyono Koes Handayanto, & Siti Zulaikah. (2016). *Korelasi Natara Kemampuan Menalar Ilmiah dan Pemahaman Koonsep Siswa pada Materi Usaha dan Energi*. Pros. Semnas Pend. IPA Pascasarjana UM, 1, pp. 479-483. Malang.

Sudarmiyati, W. (2016). Peningkatan Hasil Belajar IPA Melalui Model Pembelajaran Kooperatif Tipe Think-Talk-Write Pada Siswa Kelas VIII Tahun Pelajaran 2014/2015. *Jurnal Pendidikan Fisika* , 4 (2), 86-98.

Suharman. (2005). *Psikologi Kognitif*. Surabaya: Srikandi.

Suharsimi, A. (2006). *Prosedur Penelitian: Suatu Pendekatan Praktik*. Jakarta: Rineka Cipta.

Sutarno. (2014). Profil Penalaran Ilmiah (Scientific Reasoning) Mahasiswa Program Studi Pendidikan Fisika Universitas Bengkulu Tahun Akademik 2013/2014. *Seminar Nasional dan Rapat Tahunan Bidang MIPA 2014* (pp. 361-371). Bogor: Fakultas Matematika dan Ilmu Pengetahuan Alam, Institut Pertanian Bogor.

Suyatno. (2009). *Menjelajah Pembelajaran Inovatif*. Sidoarjo: Masmedia Buana Pusaka.

Wiadnyana, I. W. (2013). Penerapan Strategi Pembelajaran Kooperatif Tipe Think-Talk-Write untuk Meningkatkan Aktivitas dan Hasil Belajar PKn Siswa. *Jurnal PPKn* , 1 (4), 1.