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Analysis Metacognition and Communication Mathematics in Blended Learning Use Google Classroom

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Abstract

Communication and metacognition ability of students in SMK N 11 Semarang is still low. Students have difficulties in presenting ideas with math language also their awareness of thinking is still low so that it difficult math problem solving .This study aims to know the effectiveness of blended learning use on communication and metacognition of students. The subject of the research is students class X AN 2 of SMK N 11 semarang 2018 / 2019 .The research uses qualitative and quantitative methods . Data is collected from filling out the questionnaires of metacognition and conducting metacognition ; also math communication test. The results show that (1) The awareness of metacognisi importance being masticated, students tend to be less optimal in using their experiences and knowledge to address the math issues . (2) Blended learning is significant on raising the awareness of metacognition .The majority of students having high metacognition because they tend to use their knowledge and experiences to finish math problems in high category . (3) Math communication ability of students on the linear equation system with two variables includes solved by average 80,1 .In terms of the indicators , the average of expressing math ideas (making math models) is 88,2 , the ability to count and understand is 79,2. Interpret and describe relations with math models or make inferences is 72;9.

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INTRODUCTION

Preliminary views of math teacher all this time affects how to demonstrate math to students. Turmudi (2008:6) stated that it is seen as a strict body of knowledge have laid the foundation that students are passive object because the knowledge of math is being main .Teachers are the center of attention because they have to demonstrate math which have being prepared and viewed as strict, students no longer as active subject ;having seen as "copy machine" just imitate what is given and practiced by their teacher. According to Turmudi (2008:6) it impacts when the children discover their situation and other conditions outside the context of teaching.

It is much found on the students who capable of performing a math correctly, but fail when resolving math problems that concerned with the daily life .The students tend to have difficulties in understanding a problem as what it is being known , what is the question and the strategies what needs to be used for finishing contextual math problems. When resolving problems of linear equation system with two variables, Students are a bit easier to determine the resolution group when they know the linear equation system . Students tend to have trouble when the linear equation system is not explicit in a word problem .This shows that students have tended to be difficulties in math communication .

According to NCTM (1989), Math communication ability of students is capability as a means of communication using math language; and the ability of students in communicating what mathematics as the contents of the message to be delivered . According to Kennedy and Tipps 1994) math communication ability covering : (1) mathematical use of language presented in oral , writing, or visual; (2) use mathematical representation presented in the form of writing or visual, and (3) Represent math ideas; notation; and describes math relation or model.

Compared with the definition of math communication according to NCTM (1989) and kennedy and Tipps (1994), the difficulty of math communication often experienced students at solving problems of linear equation system with two variables is represent language about the story into discuss math as making math model of the linear equation system. The next difficulty is performing the completion procedure of linear equation system like operating or experiencing error procedure. The frequently forgotten by the students are represented back of symbols used into the form of colloquially in conclusion. In general; the most basic difficulties is in making math model. When faced with particularly difficult problems as a word problem, students easily yield and cannot do the resolutions of math. This is supported by Rusmining research , et al (2014) shows that the math literary on the student which the researched classified as low on the level below 3 , in the capabilities of making math model , give reasons for strategy and argue and find the solution of a problem ; students have a low relatively .The low level of this capacity because more teachers provide explanations of matter and minimal once students are called upon to build in addition to the information .

Zeverbergen (2004:10) , said that it is built of knowledge , mathematical knowledge of his new deal with exploring idea , and learning supported by establishing learning environment on students to build an understanding structure .Math viewed as the activity of human life made learning math put students as a subject of mathematical understanding freudenthal in turmudi (2008: 7). In the process, independence learn need to be emphasized that build knowledge mathematics through the inquiry process that encounter itself with the teacher.

Solving math problems is one of seven ability in literacy (oecd math, 2013:39).To solve math problems need the capacity to think complex, namely the cognitive and conscientiousness in proper use strategy. Awareness of students in using their mind to plan, control, and judge on the process and strategies cognitive called metacognition belonging to their selves. Schoefeld (1987) in yoong (2013:82) identify there are three aspects of metacognition namely awareness, control and beliefs about the cognitif. According to Wilson; awareness of metacognition and clarke (2004) is a key component in metacognition, which includes awareness of what is Known , understood , the difficulties experienced, learning process and thinking process.

Aware of the need to solve the problem in learning math cannot be separated from awareness of the self to learn and follow a good learning. According to the diyarko, m.pd. interviews, one of

teachers in smk n 11 semarang suggests that when learning ongoing still a lot of students who less noticed when they had been unofficially of matter in when learning takes place .Following up after a free of tasks that must be done in the house , there are still many found students who execute really see his life work after a free kick from her friend and duty to solve a problem in the class in an individual manner , there are still many children have been able to just doing sheets that it is easy, the rest rely on his friend .The data indicates the lack of awareness to solve mathematical problems on their own .

Math teacher has a role to create learning of interest to students in order bring up awareness students to follow learning and active solve mathematical problems. It cannot be denied that learning more dominated in the classroom through the resolutions of exercises about and preparation of students to follow their experiences in the class not optimized before. It means conditioning the student to study at home has not been carried out optimally, because so far only provided in the form of task at home, while control students activity in the resolution of duty has not been carried out teachers. Teachers tending to rely on the produce collection duty at school.Math teacher still use learning direct oriented on transfers matter, demos how to fix the questions and ending with give a workout about.

It is similar with opinion of Suherman, et.al. (2004:211), in learning of mathematics that are generally carried out , students receive lessons learned through information provided teachers. Material delivered to the form of a final, meanwhile, the student learning method is learn to accept (reception learning) and are regarded less meaningful .Different when done with the process of discovery is more directed to learn centered on students (maab and artique, (2013:779). Learning push students really active find their own or through the coaching process so as if students invent the concept of, rules and mathematical formula, so teachers need to setup a problem for a student to investigated , and provide procedures and resources, but did not tell them directly about the outcome of expected (song and looi, 2012: 131). According to suherman, et al (2004:75, in the classroom of constructivism, students should be empowered to build in addition to information that own, strategy and settlement of share, debate between each other, think critically about the best way to resolve any problems .Zevenbergen et al. (2004:24) stated that in constructivism class, students will be build the insights of various regions the interaction that based the context of different experiences and perspective. However, in their experiences cannot be separated from the role of active teachers, it means learning that puts forward liveliness students, does not mean that teachers being passive, as is the case with research conducted by goos in 2004 in quesland australia concluded that in their experiences teachers help guiding students to predict thinking structure through the process of discovery, where in the learning; teachers have a role getting students to predict the solution , perform the act of (sense-making), self-monitoring and draw a conclusion.

Menezes, et.al. (2012) also concludes that out of school in droves that is directed to find they are also required to special attention; teachers told all of their students and it needs to which placed emphasis on the problem of authentic and does that which is the reflections that collaborated with students of .Research chapman (2013) also provide a summary that there is in the manner of the math. Teacher learning to promote disorder to have a hand in developing is to have a chance gusts of teaching and the process of open ended , the process of discovery, of teaching by a particular topic and how it helps to the solution of a problem.

Students who have low learning independence when it is given the problem, tending to hangs theirself to others who has high skill , just a modeled after only when it is given the math problem, as evidence that awareness of metacognition of students is low which are predicted to become cause of the low finish students ability of mathematical problems .

Starts with this matter; is needed to the learning solution that students independently invented the concept of and mathematical rule with learning. Preparation of students before follow their experiences in the class need to optimized through workout that can be controlled directly by teachers without having to waiting to find the results in the class. This means when will be implemented learning to the matter certain, we need to prepare first with the problems that needs to be resolved first in house more

or less a week before learning held and done direct control by teachers

Through communication based online and followed by learning directly in the class .Blended with the teaching process are called learning that is characteristic of learning as a combination of traditional and the learning environment and electronic sjukur. Learning online that referred to is learning which uses the web, streaming video, audio communication .

Google now has issued application learning online that called with google classroom. Through the facility teachers can make online class. Through the application of the teachers can give matter, give an assignment and discuss can be carried out online, they can send its duties through the application.From online learning activities, students can learn independently with facilities source provided by teachers, and looking for other information sources. From such application, students can send the resolution, so teachers can see a groove of students thinking. Thus, through online media; teachers can control directly the results of workout that had been deposited even can provide an assessment, of commentaries and recommendations to student all at private network as well as through the discussion in google classroom.

Blended learning has good chances to being large as a solution in increasing the awareness of metacognition; the solution of students problem who finally they got, because a majority of students in SMKN 11 semarang having if the physical support facilities promised to supply android handphone that can be used as of learning tools apparently does in an online manner. As a result of this , awareness of the importance of metacognition of students in the solution of a problem can be optimized through learning to promote disorder to blended learning , as expressed yoong (2013), young (2010), that metacognition is a term of seeing change in ways of thinking and regulation of the went off on their own .Even metacognition can be used as a learning strategy to promote disorder to , as midnight studies suriyon, et.al. (2013) that were undertaken in the thailand provide an illustration of that strategy metakognisi have a positive impact for the success of a student to lose their in solving the problem of .

METHODS

The research is conducted in SMKN 11 Semarang, evergreen street , banyumanik , semarang .Research methodology with the approach it uses qualitative and quantitative carried out in smk n 11 semarang with the subjects is students of class x an 2 .Is as high as variable covering metacognition before and after learning blended used google classroom learning and math communication.Such data is collected through, interview. Test data analyzed using descriptive analysis.

RESULTS AND DISCUSSION

2 students (6%) having low score metacognition of under 42, a total of 21 students (58 %) having metacognition being with the score at intervals 42 to 65 and about 13 students (36%) having high metacognition in a 66 or more. The data indicates that majority of a knowledge use and experience in solving math problems, oriented enough to the process and objectives, enough to afford control , quite use strategy in solving problems and quite focused on new information .

From 5 aspects concerning the achievement of there are 4 the aspects that having a modest average on the aspects falling under use knowledge and experiences in order to solving problems by average 67,36, the aspect of orientation to the process and objectives is 68,33, the aspect of self control as much as 60,89 and on the aspects falling under employ any strategy to solve a problem as much as 67,64. The aspects that up a sense of anticipation into the category of a home in the hereafter and focus on new information as much as 73,89. Data was being collected went on to describe that a student has the all the potential who deserved to learning to promote disorder to blended learning because the information program could only be were uploaded . Running through google classrom it is likely that a student to lose their tending to focus on the information .

Response to students learning is gathered from the students about blended learning through comments that were written at google class room .An expression of some students make a comment that blended learning including of learning which is fun .An expression of students who have initials he said “

fun , but there a lesson that has not yet been understandable and understood ".Students who initialed AK said" how fun it is sir, for example is it scheduled sir? they are able to learn math through google class let their brain do not blunt .Students who were AH said " fun, although this is because the decisions had been made intelligible but we could learn through google class without have to wait of the schedule".Opinion of students who have initials DA said "fun, because it do not make the book empty , use hp can instantly do their tasks from teachers.

After the event was done learning to promote disorder to as many as 16 students (44%) having metakognisi moderate by the score at the interval of a 42 of the total up to 65 were theirs and as much 20 students (56%) having metakognisi high with a score of 66 or more .The above data shows that the majority of use knowledge and his experience at break also the images and been problems with the mathematics, be applied with the purpose the election process and the purpose of, able to control the ten northern tribes departed, employ any strategy in solving the problem of as well as focus on new information. From 5 aspects concerning the achievement of there are 3 the aspects that having rata-rata home in the hereafter and on the aspects falling under use knowledge and experiences in order to solving problems by rata-rata 75,69, The orientation at process and objectives of 77,59 and a focus on information is only 76,39, while the self control and use strategy to solve problems in the category of being with rata-rata 72,56 and 72,50. The data shows that through learning blended learning that is a massive metokognisi higher in terms of use knowledge and experience, oriented in the process and the objectives and focus on new information.

After blended learning 5 aspects there are 3 the aspect of having an average from the perspective of the highest using knowledge and experiences in order to solving problems by the average 75,69, on the aspect of the process and the purpose of it was 77.59 and facets focus on new information as much as 76,39, while the aspect of self control and employ any strategy to solve a problem in medium category with an average 72,56 and 72,50 .The data shows that following the completion of learning blended learning that is a massive metokognisi that in higher it use knowledge and pengalama, oriented to the process and objectives as well as focus on new information .

The frequency of metakognisi after learning to promote disorder to kept on a constant review from the aspect of using pegetahuan and by the experience of as many as 31% a student to lose their frequent and 28% always use the experience of the past or of knowledge which has under his her control used in solving the problem of, although there is still 42% sometimes use his experiences to finish a matter of .As many as 53% a student to lose their transport and communications have stated the frequent and 28% always learned well when it was learned the problem of the study .As many as 31% a student to lose their frequent and 14% always use the intellectual powers of to which it belongs to counterbalance of his own weaknesses , although as many as 44% sometimes channel them in the form here on wednesday and thursday .The above data shows that of knowledge and experience in those they have is often used in a optimal by students in solving problems that had occurred mathematics.

After learning blended learning, student orientation on the process and the goal is still high .A total of 53% students often and 19% knows what to expect teachers from the study. As many as 44 % students always and 17 % kadang-kadang learn more when interested in the study of mathematical problems .As many as 44 % 17% students often and always set goals before completing the math.

Metakognisi after learning in terms of aspects self-control based on the data shows that 39 percent of students often and 36% have always been able to motivate myself to study or finished the task mathematics.As many as 58 percent of students sometimes, 14% often and 14% always ask ourselves about how much did he was able to in complete a task.Introspection self is also sometimes done students, proven 50 percent of students often and 6% always thought if he really need to learn before finished the task mathematics.As many as 64% of students often control well in learning. 61% of students often ask myself periodically if he achieved the purpose in math.

Metacognition after learning the use strategy in terms of solving the problem of the data shows that 28% sealu students and 22% and 28%. sometimes trying to draw, produced a or a chart for help

understand math problems. When complete mathematical problems consideration should be given to a choice variety of a right .Based on data indicate that 39% students often, 17% always and 39% sometimes ask myself to consider all possible options to resolve the. As many as 36%, 11% students often and always , and 42% kadang-kadang find your own learning strategies suitable to solve mathematical problems. As many as 28% always and 31 in students frequently asked if there was any way more easy to do a thing in mathematical finished the task .

Metakognisi after learning to promote disorder to kept on a constant review of the aspect of the focus of new information .Based on the data indicate 42% a student to lose their frequent and 19% are always going on about on yourself how well she would what is she doing when learning to a new thing a in math .As many as 28% a student to lose their frequent and 33% always focused upon the meaning of and the importance of new information in resolving of mathematical problems .

An increase in metacognition students had participated in the learning to promote disorder to blended learning can be seen from the results of the test and been approved paired unsupported sample t-test , rata-rata metacognition of students before learning to promote disorder to blended learning as much as 59,86 and learning to promote disorder to 67,06 after they had participated in as much as .The results of the test and been approved t obtained = 11,886 with a value of up go sign = 0,005 which means that there was an improvement of a significant degree of metacognition after they had participated in learning to promote disorder to blended learning .

Before learning blended learning there are 21 students will have metacognition being , 13 students tend to be high and two students have a relatively low. After participating in learning blended learning as much as 16 students will have metacognition is now being constructed and 20 students as their representatives is considered to be higher.

The ability to communicate mathematics to deliver the material was the point of view of the language test results system of equations linear two variables after they had participated in learning to promote disorder to blended learning .To address the issues are contextual pertaining to system of equations linear in principle can be divided into three measures that is: 1)make a model mathematics in the form of system of equations liniernya in the form of mathematical symbols two variables) put the finishing touches to system of equations linear two variables use methods involving of an elimination or subtitusi or combined them and they obtained set of numbers drawn from the resolution is going . 3) make inferences to answer question submitted .If it is associated with communication mathematics according to nctm , so the ability of making a model related closely with an indicator the ability of expressing ide-ide mathematics through from a written note (e) , the settlement of the problem system of equations linear closely related to the ability to see the , kept count to address the issues (m) and the ability of make inferences closely related with the ability

In general rata-rata the ability to communicate mathematics students after they had participated in learning to promote disorder to blended learning reached 80,1. The program is viewed from aspek-aspeknya , rata-rata the highest and the 88,2 on the aspects falling under the ability of expressing ide-ide math the way make a model mathematics in the form of system of equations linear two variables in the manner of a firmly based on problems that had occurred which it is served .Rata-rata the next step is to the ability to see the and he has numbered or make system of equations linear two variables with earth or is it just 79,2. In the long term the rata-rata on indicators of the quality of interpreting and illustrating the relationships with models in a situation like we make of the conclusions and is it connects the back of a series of poor results obtained by what you asked reached 72,9.

Seen from completing the ability to communicate the mathematics of 36 students who attend the learning blended learning there are 26 students (72 %) on the top or equal to kkm = 70 .Ketuntasan testing shows communication of mathematics can be seen from the results of one sample t-test obtained thitung = 3,246 with a value of significant = 0,003 & it is; 0.05 , which means that the ability to communicate mathematics exceeding the limit completion at least that is 70.

The ability to communicate students in resolving problems the first high.On the first, as much as 97 percent of students being able to express ideas

mathematics of making a model mathematics, as many as 81 percent of students able to understand and counting right to complete system of equations linear made using way elimination, substitutions or combined. 75% of students capable of interpreting and illustrating relationships with l a situation model by make inferences correctly , but there are still 19% of students who make inferences was incomplete and wrong , while 6% does not make a conclusion .

On the second, ninety-four percent of students being able to express ideas mathematics of making a model mathematics of system of equations linear the two variables with right , 67 percent of students able to understand and counting right to complete system of equations linear made using way elimination , substitution or combined, but there are still 33 percent of students wrong determine the set of resolution .As many as 58 percent of students capable ofinterpreting and described relations with models a situation by make inferences is right , but there are still 33 percent of students make inferences incomplete and wrong , and 8 % did not make inferences .

On the third, as many as 75 students being able to express % mathematics ideas of making a model of mathematical linear equation system with two variables correctly , but there are still 17 % wrong in making a model 8% mathematics and mathematical students do not make a model. As many as 75% students able to understand and count correctly to complete system of equations linear made using the elimination, substitutions or combined, but there are still 17% students any determine the settlement and 8% students does not specify the settlement. About 64 students capable of describing interpreting the relationships with models with jump is right, however there were 19% students who jump incomplete and wrong, and 14% not jump .

On the fourth, some students 69% being able to express ide-ide mathematics of making a model of mathematics system of equations linear two variables correctly, but there are still 28% wrong in making a model math and 4% students have making a model math. Some students 58% able to understand and counting right to complete system of equations linear made using means elimination , subtitusi or combined , but there are still 39% students determine the wrong settlement and 3% students have determine the resolution .Some students 58% capable of interpreting and described relationhips with models with make inferences correctly, but there are still 31% students who make inferences incomplete and wrong, and 11% does not make conclusion .

Regression model that influence metacognition (x) against the ability to communicate mathematics (y) namely: y = -14,595 + 1,412x.The model indicating that every increased a unit metacognition would be followed by increasing the ability to communicate mathematics of 1,412 or otherwise. Model regressions tested the meaning use the obtained = 5,545 with significance 0,000 & it; 0,05, which would mean there are significant influence metacognition against the ability to communicate math. The contribution to the ability to communicate metacognition mathematics of 47,5%.

Communication it such an important part dikuasi by student will because orientation most of them are work and in the workplace not out of trouble associated with communication mathematics. Competence animation one of the major position on SMKN 11 semarang with vision scored workers who ready-made in the field of animation to capable of working at animation industry and being entrepreneur. To work in the field of art creative was needed tenacity, independence in work so that its quality their products acceptable in the community. Not only subjects productive all it takes students to make master the skills animation, but we need support from other subjects. Mathematics one subjects adaptive play an important role in build logic think students, solve problems and having communication mathematics so expected to be the problem solver and able to communicate with a capacity of their logic in daily life

According to NCTM (1989) , the ability to communicate mathematics is capability students in using math as a means of communication (the language of mathematics) , and students ability in communicate of mathematics that learnt as the message that must be presented .According to kennedy and tipps (1994), the ability to communicate mathematics covering: 1 the use of language mathematics presented in the form of oral, writing, or visual; 2) the use of representation mathematics presented in the form of writing or visual, and 3) the represent of ideas of mathematics, using the term or mathematical notation in representing ideas

mathematics, and describing relations or model mathematics .

Make a model it such an important part and is the major key to in solving problems. The process of turning colloquially is becoming the language of mathematics that full of by means of symbols have been used to simplify the next process to resolve problems into simpler ones commissions and the resolution of into language a colloquial or make inferences is one of indicators in communication mathematics .So as to have good communication of mathematics that required students for finishing awareness of the self Problems, using knowledge owned, choose the right in solving the math.In other words necessary metacognition strong in students. Koriat (2002) in buratti and allwood (2015: 20) noted metakognisi widely about knowledge of cognition in general himself as the arrangement that led to the process of cognitive as the goal.

Make a model it such an important part and is the major key to in solving problems .The process of turning colloquially is becoming the language of mathematics that full of by means of symbols have been used to simplify the next process to resolve problems into simpler ones commissions and the resolution of into language a colloquial or make inferences is one of indicators in communication mathematics. So as to have good communication of mathematics that required students for finishing awareness of the self.

Blended learning use google class room is one of learning that combines teaching and learning direct online.It originally more dominated in the classroom through learning directly (face to face), to progress demanding teachers to use the technology as a media learn without having to face to face. The use of joint direct learning and learning online called blended learning (graham, 2005 in janthon, et.al (2015). Learning online use google class room is one way places students to be more independent in learning, get the job done before learning face to face in class.Through learning online will be the spotlight students, because in line with characteristic of students who difficult off hp android.By informing and that the can be opened through hp android train students to always attentive, a purpose Planned learning and train performance thoroughly (sperling, et.al. (2002: 76)

Blended learning use google class room is an alternative learning to overcome the lack of independence students in learning, because with existing facilities, given the students solve problems contextual about the linear equation system with two variables to find a model math, complete system of equations linear and leaving the conclusion. This is in accordance with the procedures which given silberman (1998: 103-104; menezes, et al. (2012) consisting of 1) the granting of problem in front of students; 2) furnishing support the student to study independently; and 3) held discussions for their duties .But the facilities used. Running through google class, by the time students given the assignment more loose, so that student all at the flexibility to menyelesikan problems that can be conducted at anywhere and be free from space and time, because the students can be an opening through the android application. This task as a form of train character preparation of students before learning in the classroom. Control teachers on the task will be immediately carried out students, because when the students sent to the online notivikasi on cell android used teachers , so that it can study , the comment or saran-saran when the resolution of students is weak . Can directly provide an assessment can be known personally by the students send notivikasi hp android duty by their students .

Workout that is in google next class room as a replacement for student worksheet that was not in a web-based our paperAccording to hamdani (2014:74), student worksheets is a device learning as appendages or the supporting infrastructure for the execution of a plan of learning in the form of information sheets of paper which is in the form and the questions which ought to be answered students to increase the involvement of students in learning , good strategy and would be used in heuristic expositorical. Through a google class room also provides more student to send in the form of writing teachers typed or send the results of record a picture the resolution of students , so that in heuritis steps can be seen by students .

Learning done is in line with the opinions of justice (2009) that learning improve the quality of education through a more upon an activity students directly and more focus on learning about how students learn.Learning belended learning use google class room is a solution to develop capacity thinking

and do reflection back when the results are not based on.This is consistent with opinion henningsen & amp; stein (1997) in rooney (2012) that without involved in the process active for learning in class, student ca not expected to develop the capacity for thought, Reason, and solve problems in mathematics in the right way and strong .

Google class room that gives the problems to be the medium contextual training for students to get to know , understand and solve our problems of communication mathematics. As is the case with research chick and pierce (2012) about learning using real data would motivate the principle of learning the real world .

Test results completing use test t and kkm = 70 shows that communication aftermath learning blended learning significantly more than kkm = 70. The responsibility to solve problems independently with facilitation online task through google class room was the key to success in learning this.Learning demanding students to actively in the online, responsible for her work, so that have an impact on the ability to communicate mathematics at completing. This is in accordance with rooney (2012) research , who stated that the learning will not only get about the latest information were mentioned during learning but to get experience and benefits. The core values that appear is the responsibility of accountability, inclusion and taste love mathematics.The results of the study roehrig, et al. (2011) also provide a summary that the results of the learning improve the quality of learning and there are relevant relation between teacher and students to conduct the investigation science and the activity of mathematics.

Learning the teaching process blended used google class room metakognisi had managed to improve students. Koriat (2002) in buratti and allwood (2015:20) stated that metakognisi widely pertaining to knowledge of cognition in general such as the process arrangement soul that has resulted in on the cognitive process of as the goal .Based on the results of research studies show that blended learning through learning used google class room that is a massive criteria: on the orientation to the process and objectives as well as focus on the information you just. Online task demands on the resolution process matter in independence which has the effect of on the outcome .Because the task is private and known only by the sender and teachers , and the existence of comments from teachers about mistake that occurs , students will be try and analyze returned what is keeping solving the problem was still wrong .Student orientation being changed toward the processes and the purpose , that the impact of supermarkets on the results.

Learning blended learning impact on improving the self control and the use of a strategy to solve problems.Strategy solve problems that operates when in class x is accept what demonstrate teachers, and through learning blended learning use google class room switch on process of trying itself through various sources to find a solution openly.This process had significant to the process of setting taught himself independently, which means there change metacognition students.It is like opinion yoong (2013) stating that metakognisi is thought the term see yourself and setting learn for themselves.

Learning blended learning used google class room demanding students for attentive to problems and learning. Students are required to understand the problems uploaded to google class. Learning it in person demanding students to the full attention, for when not done with good, students will difficulty in solve the problems him. On one side, he was prosecuted to immediately send the resolution , for in learning the can be set a term delivery .Thus showing that learning these affect the change metakognisi for students to a better direction .This is in accordance with characteristic of students who have metakognisi high according to spereling, et.al (2002:76) the attentive, learning for the purpose, planned , instruction perform in a fastidious and ask to understand something .

Learning demands students to solve the problem like the steps put forward polya in zeverbergen (2004:108), orton (2006: 86); suherman (2004:99); mataka (2014:168), namely understand a problem, plan resolution, solve the problems in accordance with the plan and check back against all measures that has been done. Check back is be the most are mostly done students especially that results resolution was still wrong after being marked .Because there is a demand that students must mark until right , have consequences for a student to check the Through a class at google, teachers can send the

value of commentary about her lack and her want so that students can send back his duties as the form of improvement. It is in accordance with statements from pennequin, et al (2010:169), that a good metacognition level cognition through the activity of observation and arrangement during the process solving mathematical problems .

Learning blended learning use google class room demanding students to use of knowledge and experience in get the job done. Theoretical learning cognitive become a reference in learning this, as argue by suherman (2003:36), that the process get information and new experience directly fused with the structure mental through the process assimilation and process of mental structuring back as a result of information and new experience through the process accommodation. The process of learning which he is applied according also with a view constructivism , as expressed zevenbergen, et al (2004:23) among other: seminar built actively by students. Learning to get a response have good students who was a learning have any choice in used google class room because not limited in time and space. In general through learning blended learning class room used google had managed to improve metacognition students and the ability to communicate of mathematics that reached completing. This is in accordance with suriyon research, et al (2013), who provide a summary that strategy metacognitioni have a positive impact for the success of students in solving the problem of .And so did the other research amen sukestyarno (2015), which show that there was a positive relationship metacognition awareness and cognitive skill .

CONCLUSION

Metacognition awareness of students before learning blended learning used google class room to their students class x animation 2 SMKN 11 semarang are being, because students tend to be optimal know and the experience of to solve the problem mathematics, tending to have sufficient orientation to the process and objectives, enough in control and use strategy in solve problems mathematics even though they were high in focus on new information

Learning blended learning used google class room implemented through activities upload matter and task and discussion forum through google class room as a form of the preparation of students to follow learning in the classroom.

Learning blended learning significantly effective against raising awareness metacognition .The majority of students having high metakognition because students tend to use knowledge and the experience of mathematics to solve the problem in the category of high , oriented to the process and purpose in category high as well as more focus on new information although there were in control and employ any strategy in resolving problems the mathematics.

The ability to communicate mathematics students on any material system of equations linear two variables were classified as been solved by the average 80.1 .Seen from the indicators , the average capability express ideas mathematician (make a model mathematics) as much as 88,2, the ability to see , count of as much as 79,2 commissions and the ability and describing their relations with the models a situation or make inferences as much as 72,9.

There an effect which is significant metacognition students against students the ability to communicate mathematics.

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