INTERNATIONAL PROCEEDING

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INTERNATIONAL SEMINAR

"OPTIMIZING OF MULTIPLE INTELLIGENCES TO EXAGGERATE HUMAN POTENTIAL TOWARDS VIRTUOUS CHARACTER"

Editors:
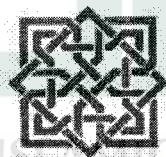
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ON THE 1st SUMMIT MEETING ON EDUCATION, THE END OF THE YEAR 2013

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DAFTAR ISI

KATA PENGANTAR

Bismillahirrohmanirrohiim, Assalamu'alaikum warahmatullaahi wabara-kaatuh. Alhamdulillahirabbil'alamin. Wabihi nasta'in 'ala umuridunnya waddin. Wash-sholawatu wassalamu'ala asrofil anbiya'I walmursalin. Wa'ala alihi wa ashabihi ajmain. Amma ba'du. Robbisrohli shodri wayassirli amri, wahlul 'uqdatan millisani, yafqohu qauli. Segala puji bagi Allah SWT, shalawat serta salam semoga senantiasa tercurah kepada Nabi Muhammad SAW, beserta para sahabat dan umatnya yang senantiasa mengikuti sunahnya.

Kegiatan ini terselenggara atas dasar perlunya perubahan demi perubahan, inovasi-inovasi pembelajaran senantiasa menjadi perhatian kalian akademik dan praktisi pendidikan.

Dalam hal ini prodi PGMI akan berusaha semaksimal mungkin untuk senantiasa mengembangkan kegiatan yang mendukung peningkatan mutu tersebut, baik untuk dosen, mahasiswa, bahkan bagi alumni dari PGMI itu sendiri, serta masyarakat luas pada umumnya sebagai pengguna dari alumni PGMI Fakultas Ilmu Tarbiyah dan Keguruan UIN Sunan Kalijaga. Peningkatan mutu tersebut di antaranya dilakukan dalam bentuk pelaksanaan 'seminar internasional'. Seminar internasional akan menetapkan tema *"Summit Meeting on Education The End of The Year 2013"* dan Penandatanganan MOU dengan University Kebangsaan Malaysia (UKM).

Adapun kegiatan yang diselenggarakan meliputi kegiatan Seminar Internasional dengan tema Optimalisasi kecerdasan majemuk untuk melejitkan potensi menuju manusia berbudi pekerti. Dilanjutkan Fashion show Tarbiyah *Fashion Week* 2015 yang bertajuk "Islami, Trendy and Syar'i". Kegiatan berikutnya adalah Seminar Nasional dengan tema Kurikulum 2013 "Realisasi dan Refleksi Kurikulum 2013". Berikutnya Seminar Peringatan hari Ibu dengan "Peran keluarga dalam pendidikan anak (Kolaborasi catur pusat pendidikan)". Dilanjutkan dengan acara Bedah buku yang bertema "Merajut pendidikan di kota Yogyakarta" karya: Bp. Zainal Abidin, M.Pd. Selanjutnya Seminar Edupreneurship dengan tema "Membangun kreatifitas melalui edupreneurship"

Adapun narasumber dari kegiatan ini dari berbagai negara, yaitu: dari negara Malaysia, Australia, Brunei Darussalam, dan Indonesia. Adapun nama-nama narasumber sebagai berikut: Prof. Dr. Lilia Halim (University Kebangsaan Malaysia), Bapak Setiyo Iswoyo, Drs. HD. Iriyanto, M.M., Dr. Slamet Suyanto (Dosen Pendidikan Biologi, UNY), Hj. Dyah Suminar (SE istri mantan walikota Yogyakarta), Prof. Dr. Taufik Ahmad Dardiri, SU (Dosen Fakultas Adab dan Ilmu Budaya, UIN Sunan kalijaga)., M Arief Budiman, S.Sn., Managing Director PT. Petakumpet Yogyakarta. Adapun peserta dari kegiatan ini dari berbagai negara yaitu Turki, Rusia, Thailand, Malaysia.

Dalam hal ini dosen atau pendidik pada umumnya adalah perintis pembangunan di segala bidang kehidupan dalam masyarakat. Seorang dosen atau pendidik yang benar-benar sadar akan tugas dan tanggung jawabnya, tentulah akan selalu mawas diri, mengadakan introspeksi, berusaha selalu ingin berkembang maju, agar bisa menunaikan tugasnya lebih baik, dengan selalu menambah pengetahuan, memperkaya pengalaman, menambah kualitas dirinya melalui membaca buku-buku perpustakaan, mengikuti seminar loka-karya, kursus-kursus penataran, dan sebagainya agar selalu bisa mengikuti gejolak perubahan sosiokultural dalam masyarakat serta kemajuan ilmu dan teknologi modern dewasa ini. Melaui kegiatan *international Summi Meetng* ini diharapkan dosen, guru, dan mahasiswa menjadi lebih profesional, khususnya terkait dengan kompetensi profesional.

Pekerjaan mengajar memang tidak selalu harus diartikan sebagai kegiatan menyajikan materi pelajaran. Meskipun penyajian materi pelajaran memang merupakan bagian dari kegiatan pembelajaran, tetapi bukanlah satu-satunya. Masih banyak cara lain yang dapat dilakukan guru untuk membuat siswa belajar. Peran yang seharusnya dilakukan guru adalah mengusahakan agar setiap siswa dapat berinteraksi secara aktif dengan berbagai sumber balajar yang ada. Guru pun sangat erat kaitannya dengan pendidikan karakter.

Pendidikan karakter yang semakin hangat sering menimbulkan kekhawatiran para guru. Namun sebenarnya hal itu tidak perlu khawatir, masih banyak tugas guru yang lain seperti: memberikan perhatian dan bimbingan secara individual kepada siswa yang selama ini kurang mendapat perhatian. Kondisi ini akan terus terjadi selama guru menganggap dirinya merupakan sumber belajar satu-satunya bagi siswa. Jika guru memanfaatkan berbagai setrategi pembelajaran secara baik, guru dapat berbagi peran dengan setrategi. Peran guru akan lebih mengarah sebagai manajer pembelajaran dan bertanggung jawab menciptakan kondisi sedemikian rupa agar siswa dapat belajar. Untuk itu guru lebih berfungsi sebagai penasehat, pembimbing, motivator dan fasilitator dalam Kegiatan Belajar Mengajar.

Upaya Pemerintah terhadap tenaga guru sebenarnya telah dilakukan oleh Pemerintah Republik Indonesia, melalui berbagai bentuk kebijakan. Ditetapkannya Undang Undang nomor 14 tahun 2005 tentang guru dan dosen merupakan dasar kebijakan untuk memperkuat eksistensi tenaga kependidikan sebagai tenaga profesional, seperti profesi-profesi yang lainnya. Kualitas profesi tenaga guru selalu diupayakan, baik melalui ketentuan kualifikasi pendidikannya maupun kegiatan in-service training, dengan berbagai bentuknya, seperti: pendidikan dan latihan (diklat), penataran dan pelibatan dalam berbagai seminar untuk memperbarui wawasannya dalam kompetensi pedagogi dan akademik.

Pemerintah mulai menyadari betapa strategisnya peran tenaga guru dalam mengantarkan generasi muda untuk menjadi sumber daya manusia (SDM) yang berkualitas dan kompetitif sehingga mampu mewujudkan suatu kesejahteraan bersama. Sejarah peradaban dan kemajuan bangsa-bangsa di dunia membelajarkan pada kita bahwa bukan sumber daya alam (SDA) melimpah yang dominan mengantarkan bangsa tersebut menuju pada kemakmuran, tetapi ketangguhan daya saing dan keunggulan ilmu pengetahuan dan penguasaan teknologi (ipteks) bangsa tersebutlah yang berperanan untuk meraup kesejahteraan. Bahkan SDM yang menguasai ipteks cenderung memanfaatkan teknologinya untuk menguasai SDA bangsa lain. Dalam hal ini pemerintah ingin mengejar ketertinggalan dengan menyempurnakan kurikulum KTSP menjadi Kurikulum 2013.

Kurikulum 2013 yang telah diimplementasikan pada tahun ajaran 2013/2014 menimbulkan pro dan kontra atas kurikulum tersebut masih terus terdengar. Banyak pihak yang mempertanyakan kesiapan implementasinya, pengembangan bahan ajarnya, evaluasinya, dan proses pembelajarannya di kelas. Perwakilan guru di Kota Kupang menilai implementasi kurikulum pendidikan 2013 akan menjadikan guru-guru seperti robot. Alasannya, semua Rencana Pelaksanaan Pembelajaran (RPP) dan Silabus disusun oleh pemerintah pusat. Sedangkan guru hanya siap untuk mengajar dengan RPP yang ada. Pada tahun ajaran 2013/2014, kurikulum baru akan diberlakukan untuk siswa kelas 1 dan 4, sedang siswa kelas 2,3,5, dan 6 masih menggunakan kurikulum lama. Beberapa pendapat pro dan kontra masih terus berlanjut, tapi mau tak mau kurikulum baru akan segera diimplementasikan secara bertahap. Seminar ini memperbincangkan masalah tersebut dari sisi pembuat kebijakan, ahli kurikulum, dan praktisi pendidikan/pengajaran.

Demikian yang dapat kami sampaikan terkait dengan esensi dari penyelenggaraan kegiatan *"Summit Meeting on Education The End of The Year 2013"*. Kami mengucapkan terima kasih banyak atas partisipasi dan dukungan dari berbagai pihak yang tidak dapat kami sebutkan satu per satu. Tanpa bantuan dan partisipasi rekan-rekan semua kegiatan ini tidak dapat terlaksana dengan baik. Semoga kegiatan ini dapat menambah kontribusi pada khasanah keilmuan khususnya pada Pendidikan Dasar dan memberi manfaat kepada para peserta dan pembaca. Amiin

Yogyakarta, 19 Desember 2013

Ketua Panitia

Dr. Aninditya Sri Nugraheni, M.Pd.

STATE ISLAMIC UNIVERSITY
SUNAN KALIJAGA
YOGYAKARTA
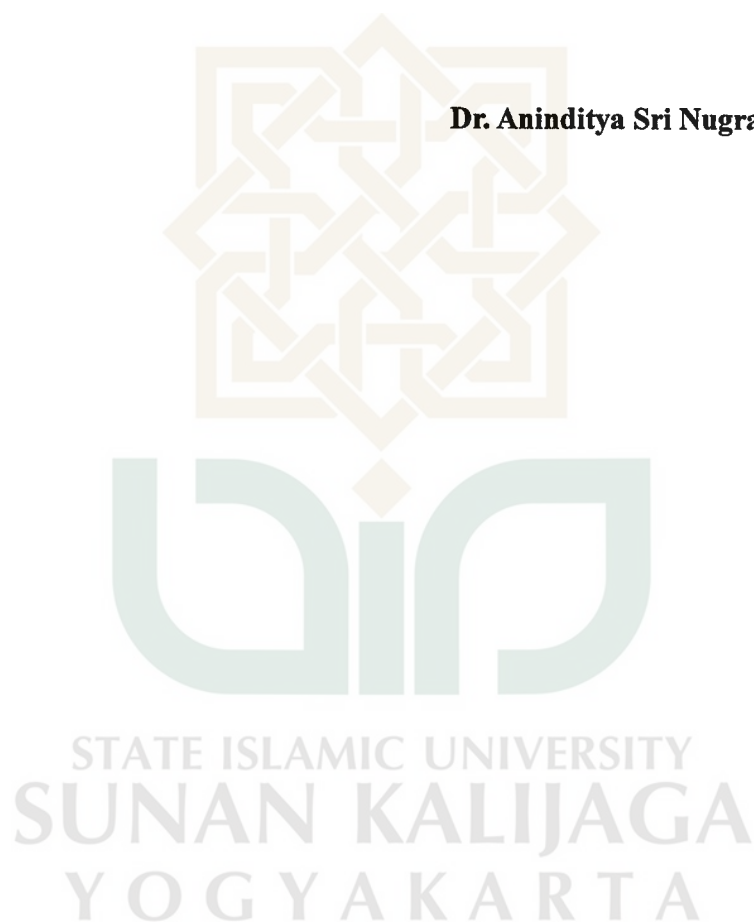
THE DEVELOPMENT OF MATHEMATICS LEARNING PRODUCTS BASED MULTIPLE INTELLIGENCES

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ABSTRACT

This study aims to produce products of math learning based multiple intelligences such as math films.

The method used in this study is the research and development follows the model of Borg & Gall. Subjects in this study were students in the fourth semester of PGMI (Education of Primary Islamic School Teachers) department year 2012/2013. The technique of collecting data used was a questionnaire. Procedure of the development include: planning, organizing, implementation, and assessment of the final product.

The result of this research concluded (1) (a) There are 2 films those are Film 1 and Film 4 created by students as the remedial of mid-semester test of math study 2 in fourth semester year 2012/2013. (b) The competence that exists in the film 1 is to understand the comparison and its application, while in the film 4 is to understand KPK-FPB and roots-ranks and logarithms. (c) Film 1 can be accessed on http://youtu.be/we8r90xFEIE(FILM MATEMATIKA PGMI UIN SUNAN KALIJAGA MOVE ON!). Film 4 can be accessed on http://youtu.be/r7-5TuH4alw(FILM MATEMATIKA PGMI UIN SUNAN KALIJAGA MI ISLAM ALHAQ). Student's perceptions showed that math learning based multiple intelligences contribute in linguistic, kinesthetic, musical, existential, logical-mathematical, visual, and intrapersonal with high category, except for the very high interpersonal intelligence and natural intelligence in medium category. (3) The result of assessment in the last product: Both of the films include the very good category according to material expert and those include good category according media expert.

Keywords: *learning product, mathematic study,multiple intelligences*

A. INTRODUCTION

Organizing lectures in PGMI Department facilitates various subjects including mathematics. Mathematics as principal subjects in SD/MI should be mastered well by all prospective teachers in MI/SD. Mathematics is taught at primary and secondary level aims to equip students with the ability to think logically, analytical, systematic, critical and creative. Also to be able to use mathematics to communicate ideas or concepts using symbols, tables, diagrams and other media[1]. It also has the ability to manage and utilize the information to survive in the conditions which always change, not sure and competitive. This is due to the development of science and technology that enables all

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[1] Ibrahim dan Suparni, Strategi Pembelajaran Matematika (Yogyakarta, Bidang Akademik UIN Sunan Kalijaga: 2008)page:36

parties can obtain abundant information, quickly and easily from a variety of sources and places in the world, besides the fast growth, the changes also occur rapidly[2].

The theory of Multiple Intelligences developed by Howard Gardner was officially introduced in 1983 through his book Frames of Mind which were revised with Intelligence Reframed in 1999[3]. The development of multiple intelligences of this study led to a new consciousness, that human beings are created in diversity, and should receive this as a gift that can be a positive potential for mutual support, not as a potential difference to each other being selfish.

Researchers have carried out some form of mathematic lecture based multiple intelligences. Among others, a math exhibition projects:which consists of several parts: math material, visual aid and manipulative materials, slogans and mathematics songs and mathematic posters. Implementation of the course also consists of mathematics quiz contest with each student playing the role of a citizen group madrasa of certain areas. From the implementation of the model classes, when conducted research produce a positive influence with the result: Implementation of multiple intelligences-based mathematics instruction with visual aid, games and quiz competition design can develop not only logical-mathematical intelligence but also linguistic, kinesthetic, musical, visual, interpersonal and intrapersonal. Mathematics learning based multiple intelligences had a positive effect on the character of the student with 95% confidence level[4]. After evaluating the course in the previous semester and year, it turns out no one has developed a learning product based multiple intelligences. Intention of the learning product here is something that is made by a student that can be widely accessed by students and observers of mathematics learning.

Starting from student's remedial activities that are getting some scores less than the minimum standard, then formed a group to make a video/film with Math 2 lecture material and its learning. The target of the group task is that students who get remedial can role as a teacher or a person who can explain the lecture material, which is shown in video format.

Based on some of the videos that are produced, researchers are encouraged to further develop it into a research of development mathematic learning product based multiple intelligences.

From the description above, the problem that can be formulated is: How do the characteristics of mathematics learning products based on multiple intelligences produced in PGMI? How do students' perceptions of the contribution of learning mathematics with the multiple intelligences to the complex intelligences? What is the quality of mathematics learning products based on multiple intelligences according to the expert judgments?

B. STUDY OF THEORY

1. The Nature of Learning

The term 'learning' in the Merriam-Webster dictionary is: to gain knowledge, understanding, or skill by study or experience[5].While 'study' is defined as: to consider attentively or in detail[6]. It means that learning is acquiring knowledge, understanding or skills through observation or attention in full or based on experience. In other hand, Ibrahim & Suparni said that learning includes three

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2   Departemen Pendidikan Nasional, Kurikulum KTSP.(Jakarta:2006) Depdiknas

3   Ibid, page: iii

4   Penelitian *quasi eksperiment* dana Fakultas Tarniyah year 2012

5   Merriam-Webster, New Merriam-Webster English Dictionary. Massachussets: Inc. of Springfield (1989):page. 420

6   (Merriam-Webster, 1989: 712).

things: preparation, execution, and purpose or learning outcomes[7].

Based on the explanation of a wide variety of definitions of learning or learning can be summarized that learning is a process of changes made by the students themselves to acquire knowledge, understanding, attitudes, beliefs and skills through full attention or experience, which is done through the 3 stages of preparation, implementation and achievement of goals.

2. Reality of Mathematics

Etymologically, mathematic means knowledge gained by logical reasoning. Mathematics has a root word meaning 'mathema' which means knowledge or science. According Elea Tinggih mathematic means knowledge which obtained by logical reasoning[8]. The characteristics of mathematics as a deductive science does not accept generalizations based on observation (inductive), but must be based on logical proof[9].

Reys and friends said[10]:

"...Mathematics is a study of patterns and relationships, is a way of thinking, is an art, is a language, and is a tool...."

It means, Reys and colleagues state that mathematics is research and study of patterns and relations, a road or way of thinking, an art, a language and a tool. And Kline explained that the math is not separate knowledge that can perfect itself but because of the presence of mathematics it can help people to understand and know the problems of social, economic and nature[11].While Gatot Muhsetyo convey the sense of mathematics learning is the process of providing learning experiences to students through a series of activities are planned so that students gain competency about mathematics learning material[12].

3. Learning products

According to the Oxford Paperback Dictionary & Thesaurus Dictionary[13] meaning of 'product': Product (noun): 1) An article or substance manufactured for sale 2) A result of an action or process 3) A substance produce during a natural, chemical or manufacturing process 4) Math's Multiplying a quantity by one number by another.

4. Mathematics Learning Product Type

Remember the type, if the type of learning products are similar with the media or teaching materials, then according to Gatot Muhsetyo distinguish and classify the media in different aspects, they are: 1) From the material, in the printed media and non-printed media, 2) Of the impressions, a projection media and non-projection media, 3) From the electricity, in the form of electronic media and non-electronic, and 4) From the measure of progress, a simple and modern media. Such tools can be shaped as board (board, paste), all forms of print (books, worksheets, modules, practice guidelines), all forms of electronic materials (calculator, radio, TV, VCD, computers, internet, LCD[14])

Another case when it similar with the teaching materials, according to their shape teaching

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7   Ibrahim dan Suparni. Strategi Pembelajaran Matematika. Yogyakarta: Fak. Saintek UIN Sunan Kalijaga(2008) page.50

8   Erman Suherman dkk, Strategi Pembelajaran Matematika Kontemporer (Bandung, UPI: 2003) page15-16
9   Erman Suherman dkk, Strategi Pembelajaran Matematika Kontemporer (Bandung, UPI: 2003)page 15-16
10   Reys et al, Helping children learn mathematics. (Fifth edition; Boston: Allyn and Bacon, 1998)page.2
11   Opcite, hal 17
12   Gatot Muhsetyo: Pembelajaran Matematika SD. Jakarta:Universitas Terbuka(2009) page.26
13   Oxford & Thesaurus. Paperback Dictionary (Oxford University Press;2009)page: 730
14   Gatot Muhsetyo: Pembelajaran matematika SD (2009):page 2.1

materials are distinguished into 4 types (Andi Prastowo, 2012: 40), those are: printed materials, teaching materials or hear audio programs, instructional view, and heard materials or audiovisual, and teaching interactive materials.

5. Video and Film in Learning Mathematics

More specifically, the definition of 'videos' can be explained by Kamus Besar Bahasa Indonesia[16]. Video is a live image or recording television programs through the television show. In other words, a video is a moving picture show with sound[17]. According to Indonesian dictionary (KBBI) film is a live picture or play of a live picture story[18]. So in general it is not very different between video and film. The characteristics of the film, both the advantages and limitations have many similarities with video. According to Andi Prastowo there are 8 steps[19] for creating a program in instructional videos or films are: Finding the title matches with the basic competencies, manufacture synopsis that describes briefly and clearly about the material that will be discussed in the video, story board drafting, image capture, editing, assessment the substance of the program both of education and cinematography, giving the task at the end of the screening and assessment of a given task.

6. Learning Approach to Multiple Intelligences Understanding Multiple Intelligence

Various views of intelligence at the limited scope motivate Gardner brilliantly convey the idea of multiple intelligences. Howard Gardner in his book Frames of Mind brilliantly describes eight intelligences that can be used to measure the intelligence of children. The eight intelligences are: logical and mathematical intelligence capabilities, musical, bodily kinesthetic, linguistic, spatial, interpersonal, and intrapersonal and naturalist[20]. In 2002 Colin Rose and Nicholl convey there is an additional intelligence to the 9 that is spiritual intelligence/existential[21].

To jump-start the ability of each student, it is necessary to understand the characteristics of a person in terms of the myriad of 9 intelligences[22]:

Linguistic intelligence

Linguistic intelligence is the ability to use words effectively, orally and in writing.
Logical-Mathematical Intelligence

Logical mathematical intelligence is the ability of a person with respect to a series of reasons, recognize patterns and regularities[23].

Visual - spatial intelligence

Visual da spatial intelligence is the ability to think in terms of image and towards a place or space and 3 –dimensional[24].

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16 Suharso dan Ana Retnoningsih, KBBI (CV Widya Karya, 2011)page 630
17 Andi Prastowo, *Panduan kreatif membuata bahan ajar inovatif*(Diva Press, 2012)page 300
18 Suharso dan Ana Retnoningsih, KBBI (CV Widya Karya, 2011) page 140
19 Andi Prastowo, *Panduan kreatif membuata bahan ajar inovatif*(Diva Press, 2012) page 313
20 Thomas Armstrong, *Setiap anak cerdas (Panduan membantu anak belajar dengan memanfaatkan multiple intelligence)*, USA: ASCD: 2005;page 18
21 Colin Rose dan Malcolm J. Nicholl, *Accelerated Learning for the 21st century; Cara Belajar Cepat abad 21* (Bandung, Nuansa: 2002) page 60
22 Thomas Armstrong, *Setiap anak cerdas (Panduan membantu anak belajar dengan memanfaatkan multiple intelligence)*, USA: ASCD: 2005;page 22-40
23 Kezar, Theory of Multiple Intelligences: Implication for Hegher Education, Innovative Education, vol 26, No 2, Winter: 2001
24 Sonawat and Gogri, Multiple Intelligences for Preschool Children; Mumbai:Multi-Tech Publishing co (2008)

Bodily - kinesthetic intelligence

Bodily-kinesthetic intelligence is the ability of physical intelligence to use whole of body in expressing ideas, feelings, and use your hands to produce or transform things[25].

Rhythmic intelligence - music

Rhythmic intelligence is the ability to enjoy the music, observe, distinguish, fabricate, and forming and expressing the music.

Intrapersonal Intelligence

Intrapersonal intelligence is the ability to understand itself and act on the understanding about it[26].

Interpersonal Intelligence

Interpersonal intelligence is the ability to understand the behavior, attitudes and thoughts of others[27].

Naturalist intelligence

Naturalist intelligence is the intelligence to recognize, differentiate, express, and create categories to what is found in the natural environment.

Existential intelligence - spiritual

The definition of spiritual intelligence is the capacity of a human life that comes from the heart, inspired in the form of nature to be developed and grown in, overcoming the difficulties of life[28].

7. Model and Learning Activities with Multiple Intelligences

Method or strategy of learning with multiple intelligences are as follows[29]. (1) Linguistic intelligence: the listening, reading and writing (2) Logical-mathematical: developing a scientific learning environment, using logical reasoning, and using the numbers (3) Kinesthetic: using classroom physical environment, through drama, creative movement, dance, play instruments and games. (4) Visual - spatial; using images and forms (5) Musical: using music, make a song, using or making musical instruments (6) Interpersonal: create a group, learning with cooperation and respect differences and also the giving tasks, project design (7) Intrapersonal : observation per individual, increased self-confidence, preparing reports/personal journal. (8) Naturalist: using objects in nature around (9) Existential: integrated with religiosity students

C. METHODS DEVELOPMENT RESEARCH

Procedures performed in research development is composed of 4 stages:

1. Phase I (Planning)

At this stage the researchers prepare all materials include:

    a. Mathematics 2 SAP and It's learning.

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25 Muhammad Yaumi,Pembelajaran Berbasis Multiple Intelligences (Jakarta: Dian Rakyat, 2012) page. 17
26 Ibid, page 20
27 Ibid, page 21
28 M. yaumi,page. 25
29 Isniatun Munawaroh, Pengembangan RPP Berbasis Multiple Intelligences: page 3-6

b. ollect and provide references related to mathematics learning based multiple intelligences and reference and results about the film research.

c. Collect data 7 films or videos made by students.

2. Phase II (Organizing)

At this stage the researchers began to analyze which is the used material, which materials are interrelated and determine the shape and specifications of films that will be used or will be developed.

a. Analyzing the Competency of basic subjects of Mathematics 2 whether all.has been stated in the films made by the students or not.

b. Analyze how the student product 7 film storyline, the implementation of teaching methods and strategies.

c. Ask for input to the expert on the grille good film.

3. Phase III (Implementation)

a. Ask for input to 1 peer reviewer that is a lecturer in mathematics who have.an understanding of the mathematical material.

b. Revise the film and select it based on input of expert media.

4. Phase IV (Assessment)

a. Validation of the film products that have been revised by the expert of film media. In this process the expert gives judgment over the final product.

b. Trial by uploading to 'Youtube' and social media and requesting direct.comment from the audience. (Students and students of SD/MI)

D. RESULTS AND DISCUSSION

1. Implementation and Process of Mathematics Learning Based on Multiple Intelligences

At the 15 meeting is to discuss the results of Mid-Semester Test of 2 classes, they are class A and class B. There are 5 students in the class A (Asep, Umi Fauziyah, Vikriyani, Fera and Ahmad Agus Eka Prasojo) and 2 students in class B is Singgih and Nur Hanif whose had score is less than 50 and the maximum amount that can be achieved 100. Based on this fact we need to hold remedial programs for students who scored less than the 50.

16 meeting is to discuss follow-up remedial. The shape of remedial are: a group assignment to make a film with a target: students who score less than 50 are able to master at least two topics or two questions in mid-semester test. The Implementation, he/she can act as a teacher who can explain the material in question, or make any other sort of scenario. The 18th meeting is collecting the task and screening the film.

Data Description of Seven Films

Film 1 (Move On Matematika)

Description of film: Starting accompaniment tracks, it looked atmosphere of Adisucipto road ahead UIN SunanKalijaga, and displayed the gate to the campus Faculty of Tarbiyah and Teaching. Once it looks classroom atmosphere full of wayward students.

Film 2 (Film Pendek)

Showed various grades of cast test results for the purpose of opening a story that begins as the problem of understanding the lessons learned. Then at the beginning of the story the students who have difficulty with the material given are gather in study so that no remedial learning in the future if there is another task.

Film 3 (Widya-KPK dan Persamaan Garis)

Narrated that Afrilia and Widya are meet and giving greeting with the topic being warmed about mathematics 2 and its learning. Then at the beginning of the story Vikriyani role as a teacher who teaches his friends about the mathematical material that has been given to the midterms. Here the discussion of the Commission and FPB factor tree after it in the subsequent discussion compute algebraic equations used to determine a straight line with a gradient as the root of the problem.

Film 4 (Matematika di MI Islam Al-Haq)

Consist a story about students of MI on going to their dream school. But the subject matter they are inhibited about math-related material and KPK-FPB logarithm. Explain about the material that becomes problem by the students.

Film 5 (Film 233)

At the beginning of the story to the students came to discuss the mathematical material that has been given in the form of a matter of Mid-Semester Exam. Fera then explained to her friends about the material that it is difficult to do. After that, each student is welcome to try the matter has been discussed in order to gain a deeper understanding.

Film 6 (MATEMATIKA)

Film Description: Tells about a group of students who have difficulty learning about math courses. Ahmad then come and explained the subject matter discussed in the Middle Semester Exam number 3 and number 4. Then other friends asked and asked for an explanation to Ahmad.

Film 7 (Video Pembelajaran Matematika)

Students studying together in the library looking for the mathematical material they are Yulia, Rohmatul, and Umi. Then the next morning they met in college and shared learning with Umi as a teacher and taught her friends the difficulty of mathematical material. In the discussion by Umi that is used using different methods with balloons and paper to discuss subject KPK and FPB then followed by discussion of the logarithm with Umi as the teacher who taught her friends.

Data Analysis of Assessment Material Expert

Instrument of product assessment by experts based films prepared lattice: basic competence, language, learning, strategy and media.

Results: 1, 4 and 7 films in the category very well, then the film 2, 3, 5 and 6 in the category good in the material. However, the film 3 still need to be revised based on the input of experts. It should be made clear when explaining the line, especially on the positive-negative gradient, the case of parallel or perpendicular and passing through the point (a, b)

Data Analysis of Assessment Media Expert

Analysis of the data follows media expert which uses instrument drawn up by media experts, Mr. Andika Dwijatmiko, S.Sn team from Syafa'at Marcomm.

There are four films that can be revised to be tested/uploaded those films 1, 2, 4 and 6. The 3, 5 and 7 film does not deserve to be tested/uploaded.

Revised the Product

Remember the limitations of time, from 4 films gets expert recommendations for revised only 2 films with the highest score made revisions. Two of the film is the film down 1 and 4. Film revision- editing done by films technicians assisted by the students. Revision refers to the input of the expert is to add the music to the film since the title is displayed. Eliminate the numbering after the title, because it has entered the core of the film. And also a reduction in the duration of the cast credits roll.

Final Product Assessment

The final product of this research is two revised mathematics films and expert assessment. Based on the initial idea of the preparation, the film was made based on the basic competencies to be achieved based on the score of Mid-semester test. The basic competency is a basic competence in SAP Mathematics 2 and its Learning was at 1-14 meeting. Because 1-3 meeting is the practice, the basic competencies evaluated on the basis of Mid-semester test competence is meeting 4-14. The basic competencies include understanding the roots and logarithms rank numbers, primes understand, KPK_FPB and solving its problem, understand comparison and its application and understanding the Cartesisus coordinates. In the first film the student chose number 4 and 5 of UTS questions, means the film contains basic comparison and applied competence. In the film about 4 students chose number 1 and 3 means the film contains basic competence and understanding KPK_FPB square root and logarithm.

Questionnaire to obtain data on how much the learning of mathematics on the basis of multiple intelligences encourage the growths of other intelligences arranged meet 5 different scores. Strongly agree was given a score of 5, agreed to be given a score of 4, abstentions: 3, does not agree: 2 and strongly disagree with a score of 1. Questionnaire consists of 20 items that need to be responded statement. Based on the results of a questionnaire study of 10 students of multiple intelligences, the obtained results: the growth of all intelligences compound in the high category, except the natural intelligence in the medium category and the category of very high interpersonal intelligence.

Assessment of media experts on the final product refers to both categories in both films, the first film score was 36 and the film 4 is 37.

Conclusions

Based on the results of research and discussion in chapter IV the following conclusions can be drawn. 1. The characteristics of the final product of math learning based multiple intelligences in this study are : (a) There are two films which films 1 and 4 films made by students of the Mid-semester test remedial Mathematics 2 courses and its learning was semester 4 year 2012/2013. (b) The existing of competencies in the film 1 is to understand the comparison and its application, while in the film 4 is to understand the KPK and FPB, dub roots and logarithms. (c) Film 1 can be accessed at: http:// youtu.be/we8r90xFEIE (FILM MATEMATIKA PGMI UIN SUNAN KALIJAGA MOVE ON!). As for the film 4 address that can be accessed is: http://youtu.be/r7-5TuH4alw (FILM MATEATIKA PGMI UIN SUNAN KALIJAGA MI ISLAM AL HAQ).

2. Students' perceptions Showed that mathematics learning based on multiple intelligences contribute

linguistic, kinesthetic, musical, existential, logical-mathematical, visual, and intrapersonal with high category, moderate to very high interpersonal intelligence and natural intelligence to medium category.

3. The results of expert judgment on the final product: the two films are very well categorized according to expert materials and well categorized according to media experts.

REFERENCES

Azis Nurkholik *"Analisis Penerapan Strategi Pembelajaran Matematika Berbasis Multiple Intelligences System di SMP Yayasan Islam Malik Ibrahim Gresik Full Day School"*, IAIN Walisongo, 2011.

Bairus Salim, *"Pembelajaran Multiple Intelligences (Telaah dari sudut Pandang Islam)"* IAIN SunanAmpel, 2008

Colin Rose dan Malcolm J. Nicholl, *Accelerated Learning for the 21st century; Cara Belajar Cepat abad 21(terjemahan)* (Bandung, Nuansa: 2002)

Depdiknas. (2009) *Dimensi Kompetensi Kepribadian & Kompetensi Sosial* (Bahan Belajar Mandiri Musyawarah Kerja Pengawas Sekolah), Jakarta: Direktorat Jenderal Peningkatan Mutu Pendidik Dan Tenaga Kependidikan] dari http://akhmadsudrajat.wordpress.com/2010/01/25/kompetensi-sosial-pengawas-sekolah-kerja-sama/(1 September 2012; pukul 12.05)

Endang Sulistyowati dan Luluk Mauluah, *SAP Matematika 1 danPembelajarannya* (PGMI, 2012)

--, *SAP Matematika 2 dan Pembelajarannya* (PGMI, 2012)

Erman Suherman dkk, *Strategi Pembelajaran Matematika Kontemporer* (Bandung, UPI: 2003)

Ibrahim dan Suparni, *Strategi Pembelajaran Matematika* (Yogyakarta, Bidang Akademik UIN Sunan Kalijaga: 2008)

Isniatun Munawaroh, *Pengembangan RPP Berbasis Multiple Intelligences* (2011)

Kennedy, L. M., Tipps, S., & Johnson, A. *Guiding children's learning of mathematics.* (Belmont: Thomson Wadsworth ; 2008)

Kezar, *Theory of Multiple Intelligences: Implication for Hegher Education, Innovative Education,* vol 26, No 2, Winter: 2001

Luluk Mauluah, *Implementasi Pendekatan Konstruktivisme dalam Pembelajaran Bilangan Bulat di PGMI,* Al Bidayah vol I no 12 Desember 2009

...., Pengaruh Penggunaan Strategi Pembelajaran Matematika Berbasis *Multiple Intelligence* terhadap Karakter Mahasiswa. Yogyakarta: Hasil Penelitian Fakultas Tarbiyah. 2012

Merriam-Webster Dictionary, Massachusetts 1989

Muhammad Yaumi, *Pembelajaran Berbasis Multiple Intelligences* (Jakarta, Dian Rakyat: 2012)

R. Hunter, B. Bicknell, & T. Burgess (Eds.), *Crossing divides: Proceedings of the 32nd annual conference of the Mathematics Education Research Group of Australasia* (Vol. 1). Palmerston

North, NZ: MERGA. (2009)

Robert E. Reys, et all, *Helping Children Learn Mathematics* (Allyn and Bacon, America, 1998)

Sugiyono, *Metode Penelitian Kuantitatif, Kualitatif dan R&D* (Bandung, ALFABETA, 2009)

Thomas Armstrong, *Setiap anak cerdas (Panduan membantu anak belajar dengan memanfaatkan multiple intelligence)*, USA: ASCD: 2005