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THE 2nd ANNUAL INTERNATIONAL SEMINAR ON TRANSFORMATIVE EDUCATION AND EDUCATIONAL LEADERSHIP

Educational Research to Endorse Productive and Innovative Generation in the 21st Century

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“Educational Research to Endorse Productive and Innovation Generation in The 21th Century”

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October 16-17, 2017

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Preface

The 2nd Annual International Seminar on Transformative Education and Educational Leadership (AISTEEL with web link is http://aisteel2017.unimed.ac.id/) was held on October 16-17, 2017 in Medan City, Indonesia. This conference was organized by Postgraduate School, State University of Medan (Unimed) and is the routine agenda at Unimed now. The Second Annual International Seminar on Transformative Education and Educational Leadership’ is realized this year with various presenters, researchers, lecturers and students from universities both in and out of North Sumatera participate in the theme of which is “Educational Research to Endorse Productive and Innovative Generation in the 21st Century.”

2nd AISTEEL is the annual international seminar with main aim is to discuss of recent research special for Transformative Education and Education Leadership. Several topics like: Teachers Education Model, Research Global Issue in Education, Mathematics and Science Education, Social, Language Education, Vocational Education, Curriculum, Economic, History and Management Education have been discussed at the 2nd AISTEEL 2017. 2nd AISTEEL international seminar provided experts’ view on transformative education and educational leadership as well as curriculum article presentation. There were five keynote speakers have been came Professor Keiichiro Yoshinaga, Dr. Bambang Sumintono, Dr. Sitti Maesuri Patahuddin, and Dr. Yulia Rahmawaty. The organizer had been use online submission system to receive all abstract, full paper and also communication with authors. All of information include with comment of reviewer can be checked real time by author.

Chairperson

Dr. Rahmad Husein, M.Ed
Welcoming Speech of Director of Postgraduate School State University of Medan

The Second Annual International Seminar on Transformative Education and Educational Leadership (AISTEEL)

The honorable,
- Rector of State University of Medan, Prof. Dr. Syawal Gultom, M.Pd.
- Vice Rectors of UNIMED
- Professor Keiichiro Yoshinaga, PhD, Institute of Liberal Arts and Science, Kanazawa University – Japan
- Dr. Bambang Sumintono, M.Ed., University Malaya – Malaysia
- Dr. Sitti Maesuri Patahuddin, Faculty of Education, Science, Technology and Mathematics, University of Canberra – Australia
- Yuli Rahmawati, Chemistry Education Program, Universitas Negeri Jakarta
- Deans of Faculties of Education, Languages and Arts, Social Sciences, Natural Sciences and Mathematics, Engineering, Sports Sciences, and Economics
- Vice Directors of Postgraduate School of UNIMED
- All speakers, lecturers, researchers, students, and participants

Good Morning
Welcome the honorable guests speakers Professor Keiichiro Yoshinaga, Dr. Bambang Sumintono, Dr. Sitti Maesuri Patahuddin, Assoc. Prof. Emilia Zulmira de FAN, and other speakers, lecturers and students from outside and inside Unimed to this international seminar which is the routine agenda at Postgraduate program of Unimed now. I’m glad that ‘The Second Annual International Seminar on Transformative Education and Educational Leadership’ is realized this year with various presenters, lecturers and students from universities both in and out of North Sumatera and participate in the theme of which is “Educational Research to Endorse Productive and Innovative Generation in the 21st Century.”

Ladies and Gentlemen,
In this second seminar exels the first one related to the administration by online and the publication index by either Thomson Reuters or Google Scholar. By the new policy on student’s publication, postgraduate program really matches the system, particularly for the students who will sit in the oral defence examination. Through the seminar, the postgraduate students improve their article journal writing and it is proved by many articles are submitted by the students.

The plenary speakers coming from 15 provinces in Indonesia will present topics covering multi disciplines. They will contribute a lot of inspiring inputs and new knowledge on current trending educational research topics all over the world. The expectation is that all potential lecturers will share their research findings to educational scientists and researchers as well for improving their teaching process and quality. Thus, this will contribute to the next young generation researchers to produce innovative research findings in education and educational leadership contexts.

This second seminar continues the promotion of the first sequel ‘Developing Future Teachers’ Education Model. Therefore, the propose of this second seminar on the transformative education and educational leadership research will trigger the young professional lecturers and educators to compete in the invention of innovative educational teaching and learning strategies, techniques and leadership.

I hope that the scientific attitude and skills through research will promote Unimed to be a well-known university which persists to be developed and excelled in the future.

Thank you the Rector of Unimed who always supports us in organizing the seminar. Thank you all guest and plenary speakers. Special thanks to both steering and organizing committee who have well-coordinated and colaborated in actualizing the seminar.

Director of Postgraduate Unimed

Prof. Dr. Bornok Sinaga, M.Pd
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Effect of Using Collaborative Learning Strategy on The Student’s Achievement in Writing Descriptive Text</td>
<td>1</td>
</tr>
<tr>
<td>Nursyah Handayani</td>
<td></td>
</tr>
<tr>
<td>The Development of Multicultural Based Teaching Materials on the Observation Report Text for Senior High School Student</td>
<td>5</td>
</tr>
<tr>
<td>Nurhasanah Permata Sari Sembiring, Khairil Ansari, Mutsyuhito Solin</td>
<td></td>
</tr>
<tr>
<td>The Power Behind Advertisement</td>
<td>10</td>
</tr>
<tr>
<td>Endang Larasati</td>
<td></td>
</tr>
<tr>
<td>The Effect of Using Audio Visual Media on Student’s Vocabulary Mastery</td>
<td>13</td>
</tr>
<tr>
<td>Resti Citra Dewi</td>
<td></td>
</tr>
<tr>
<td>Ideational Taxonomic Relation of Hata Pangupa in Tapanuli Selatan Wedding Ceremony</td>
<td>17</td>
</tr>
<tr>
<td>Mutia Nasution</td>
<td></td>
</tr>
<tr>
<td>Pal’s Leadership Style and Teacher’s Performance of Islamic Junior High State School (MTsN) Hamparan Perak Deliserdang Distric</td>
<td>21</td>
</tr>
<tr>
<td>Nurmala, Maria Ulfah Handayani, Denny Khairedi, Desi Prawita</td>
<td></td>
</tr>
<tr>
<td>The Influence of Work Motivation on Teacher’s Job Performance of Vocational High School in Medan</td>
<td>24</td>
</tr>
<tr>
<td>Darmawati, Sri Melfayetti, Selamat Triono Ahmad</td>
<td></td>
</tr>
<tr>
<td>Error Analysis by Using Tenses of Senior High School</td>
<td>28</td>
</tr>
<tr>
<td>Hariyanto</td>
<td></td>
</tr>
<tr>
<td>The Traditional Custom and Ceremonial Tradition in Suku Anak Dalam Language</td>
<td>32</td>
</tr>
<tr>
<td>Putri Ayu Lestari</td>
<td></td>
</tr>
<tr>
<td>The Impact of Internet Marketing on Success of Women Micro, Small and Medium Enterprises Innovation as Intervening Variable</td>
<td>36</td>
</tr>
<tr>
<td>Fivi Rahmatus Sofiyah, Ami Dilmam</td>
<td></td>
</tr>
<tr>
<td>The Effect of Cooperative Integrated Reading and Composition (CIRC) Technique on Students Reading Comprehension</td>
<td>40</td>
</tr>
<tr>
<td>Linda Efrina Nasution</td>
<td></td>
</tr>
<tr>
<td>Translation Shifts in Translating Didong from Gayonese in to Bahasa Indonesia</td>
<td>44</td>
</tr>
<tr>
<td>Wike Yurida</td>
<td></td>
</tr>
<tr>
<td>The Effect of Team Assisted Individualization (TAI) Strategy on Student’s Reading Comprehension</td>
<td>48</td>
</tr>
<tr>
<td>Khairuni Syafitri</td>
<td></td>
</tr>
<tr>
<td>The Effect of Organizational Culture on Working Disciplines of Madrasah Ibtidaiyah Head Master in Deliserdang</td>
<td>53</td>
</tr>
<tr>
<td>Muhammad Rifa’i, Syafaruddin Siahaan, Simon Nurhadi</td>
<td></td>
</tr>
<tr>
<td>Student’s Achievement on Reading Comprehension in Narrative Text by Using Think Pair Share Technique (TPS) at SMPN 1 Lubuk Pakam</td>
<td>58</td>
</tr>
<tr>
<td>Eprima Lestari Hutabarat</td>
<td></td>
</tr>
<tr>
<td>Ideational Taxonomic Relations of Hobar on Parpokatan Orja of South Tapanuli</td>
<td>63</td>
</tr>
<tr>
<td>Novria Grahayunani</td>
<td></td>
</tr>
<tr>
<td>The Effect of Using Task Based Learning Method on the Student’s Achievement in Reading Comprehension</td>
<td>69</td>
</tr>
<tr>
<td>Nilam Ulimi Siregar</td>
<td></td>
</tr>
<tr>
<td>Relationship of Initiation Structure and Consideration with Effectiveness Leadership</td>
<td>72</td>
</tr>
<tr>
<td>Wanti Simanjuntak, Syaiful Sagala</td>
<td></td>
</tr>
<tr>
<td>The Effect of Storytelling Method on Students Writing Narrative Text Ability at the Eleventh Grade Students of MAN Panyabungan</td>
<td>77</td>
</tr>
<tr>
<td>Armita Novriana Rambe</td>
<td></td>
</tr>
</tbody>
</table>
The Implementation of Curriculum 2013 in Vocational High School 4 Takengon

Zainal Arifin, Herbert C.B. Manalu, Rini Deliana, Fitri Ariyanti

The Difference of Mathematical Problem Solving Ability by Using Student Teams Achievement Division (STAD) and Direct Instruction on System Linear Equation Two Variable in Grade VIII SMP Negeri 11 Medan

Faradilla Bafaqih, Cecep Nandar

The Influence of Problem-Based Learning and Every One is A Teacher Here Models on Higher Order Thinking Skills in Environmental Pollution Topics

Kurnia Putra, Hasruddin, Ahmad Rafiqi Tantawi

The Effect of Applying Task Based Learning (TBL) Approach on The Student’s Ability in Writing Descriptive Paragraph

Vijay Khana

Teacher’s Language Style in English Course Class

Dyan Yosephin Hutagalung

Differences Between Students Mark Taught With Co-Operative Learning Model Type TGT With Guess The Words Media Compared With Students Mark Taught With Co-Operative Learning Models With Words Square Media in Hydrocarbon Subject

Hariani Siregar, Gulmah Sugiharti

Language Used by Male and Female of Darul Ilmi Murni

Syakri Hidayati

The Use of Journal Writing in Improving Student’s Writing Skill of Recount Text

Muhammad Ilham Adha

Teacher and Student Perceptions Toward Practical Implementation Obstacles at Learning Chemistry

Sepra Pajar, Ramlan Silaban, Zainuddin Muchtar

The Analysis of the Implementation and Problems of Lab Work on Chemistry Learning

Elvira Lastri, Iis Siti Jahro, Marham Sitorus

The Implementation of Using Library Card and ICT Based Library Service System in Increasing Reading Interest of Primary School Students at Tanjung Gading of Batu Bara Regency

Suci Amalia, Asih Menanti

Project Based Learning Tools Development on Alcohol and Ether Materials at Natural Science Faculty State University of Medan

Nadia Armina Ramad, Jamalum Purba

The Development of Teaching Material to Write Explanation Text Based on Mind Map

Pienti Mala Ningsih Manalu, Biner Ambarita, Rosmawaty Harahap

Improvement of Student Learning Outcome Using Model of Collaborative Based Lesson Study with Student’s Worksheet on Materials Hydrolisis

Agus Muliaman, Laila Majnun Hutagaol

The Application of Comic Learning Media to Improve Student’s Achievement on Reduction and Oxidation Reaction Topic

Anggi Desviana Siregar, Rini, Herdini

The Application of Cooperative Learning Round Robin to Improves Student Learning Achievement on the Subject of Electrolyte-Nonelectrolyte and Redoxin Class X SMAN 1 Seberida

Nora Santi, Betty Holiwarni, Johni Azmi

The Effect of Combination Cooperative Learning Models Toward Learning Result

Sapnita Idamarna Daulay

The Maintenance of Hokkien Among Chinese Speakers in Stabat

Widya Ningsih

Effect of Blended Learning Model and Learning Style to Civic Education Learning Results in Class VII in Junior High School Panca Budi Medan

Madina Qudsia Lubis, Reh Bungana Br.Perangin-angin, Mursid

EFL Student’s Uses of Um as Fillers in Speaking

Eka Riana
The Influence of Role Playing Method and Self Concept of Social Skills of 5-6 Years Old Child................. 172
Rabiah Hanum Hasibuan, Anita Yue, Yusnadi

The Effect of Learning Approach and Personality Type Towards Learning Outcomes.................................. 178
Dwoy Dinda Sari, Juluga Situmorang, Busmin Gunung

The Effect of Learning Models and Critical Thinking Skills on Social Science Learning Outcomes.............. 183
Juriah Siregar, Juluga Situmorang, Baharuddin

The Effect of Suggestopedia Method on Student’s Achievement in Vocabulary........................................... 188
Heppy Yersin Digital Purba

Application of Active Learning Strategy Type Everyone is A Teacher Here (ETH) to Increase Student Activity and Learning Outcomes in Chemistry on Salt Hydrolysis.................................................. 193
Wila Fajrina, Darra Utari Ningsih, Sri Adelila Sari, Habibati

The Effect of Learning Strategy and Type of Personalization on Student’s Achievement in Economic Science............ 198
Dewi Shara Dalimunthe

Development of Learning Tools Based on Realistic Mathematics Education of Ethnomathematics Nuances to Improve Mathematical Communication Skill Students in Junior High School 2 Percut

Seituans........................................................................................................................................... 202
Rizqi Jamiah, Edi Syahputra, Kms. M. Amin Fauzi

The Impact of Cooperative Learning Strategy and Learning Interest Toward the Learning Result of Second Year of Senior High School Students in 2016/2017........................................................................ 208
Riswan Sianturi, Abdul Main Sibuea, Edward Purba

The Development of Flash Program as a Media of Chemistry Learning on Chemical Equilibrium.............. 210
Leni Khotimah Harahap, Albinus Silalahi, Iis Siti Jahro

The Ethnic Mandailing Tradition of Courtship (Markusip) and Revitalization Efforts in the Formation of the Character Youth................................................................. 214
Riadi Syafputra Siregar, Ratih Baiduri, Robert Siharani

The Effect of Education on Unemployment Rate in Indonesia........................................................................ 218
Rahmat Putra Ahmad Hasibuan, Dede Ruslan, Fitrawaty

Development of Explanatory Text Materials Based on Problem Solving in Senior High School Pematangsiantar........................................................................................................... 222
Tiarma Nova Intan Malasari, Biner Ambarita, Malan Lubis

Learning Model of Strengthening Vocational Life Skills With Entrepreneurship Knowledge to Improve Student Learning Outcomes...................................................... 226
Husni Wardi Tanjung

A Critical Discourse Analysis Wardah Halal Beauty Advertisements.......................................................... 229
Ayu Lestari Siregar, Mei Lastri E.F. Butar-Butar

Influence of Creative Problem Solving (CPS) Mathematics Learning Model to Mathematical Problem Solving and Self Efficacy Students of SMA Negeri 3 Binjai.............................................................. 232
Nurcahaya Hutahotis, Martua Manullang, Ani Minarni

Differences in Mathematics Problems Solving Students With Implementing Learning Model Think Pair Square and Group Investigation in Junior High Schools...................................................... 236
Abdul Halim, Edy Surya

The Acquisition of Nouns and Verbs of Mandailingnese by Two-Year-Old Mandailing Children............. 240
Marwah, Amrin Saragih, Sri Minda Murni

Utilization of ICT Learning in Senior High School Teladan Medan.............................................................. 244
Tangku Salwa Miranti

The Effect of Cooperative Learning Model Based Interactive Media and Interpersonal Communication on Student’s Achievement.............................................................. 248
Catur Ayu Wialandari, Efendi Napitupulu, Keysar Panjaitan

Developing of Learning Material Based on Problem Based Learning to Increase Student’s Mathematical Reasoning Ability and Self-Efficacy in Grade X SMA Negeri 1 Medan.............................................................. 253
Anggi Paramita Daulay, Dian Armanto, Waminton R
Efforts to in Crease A Motivation to Learning Math Using “Program” Learning Model................................................................................................................................. 257

Linda Sari, Edi Syahputra

The Eford of Improving Mathematics Learning Outcome on Quadrilateral and Triangle Matter by Using Gradually Exercise Strategy with The Assistance of Image Media........................................................................................................................ 261

Ady Putra, KMS. Muhammad Amin Fauzi, Yulita Moliq

The Difference on Students’ Mathematical Creative Thinking Ability Between Realistic Approach with Conventional in The State Madrasah Tsanawiyah 2 of Medan................................................................................................................................. 264

Siska Lestari, Zul Amry, Hasratuddin

Developing Learning Materials Using Realistic Mathematics Education to Increase Junior High School Students’ Mathematical Disposition and Connection Ability................................................................................................................................. 269

Sy’aida Hazar Nasution, Izwita Dewi, E. Elvis Napitupulu

Developing Learning Materials Using Problem Based Learning to Increase Senior High School Student’s Mathematical Disposition and Representation Ability................................................................................................................................. 275

Dewi Khairani, Mulyono, Izwita Dewi

The Effect of Question Students Have Strategy on The Result of Students Learning in Mathematics.... 281

Yuliani Aruan, Edi Syahputra

Analysis of Academic Supervision Competence and Managerial Supervision in Improving the Performance of Vocational High School Supervisors in Langsa City................................................................................................................................. 284

Muhammad Hendra, Saut Purba, Mian Siahaan

The Use in Active Learning Strategy of Learning Starts with a Question Type in the Mathematics Learning................................................................................................................................. 289

Jeni Putria Efif, Ani Minami, Pardomuan Sitompul

Improving the Ability to Learn Math by Using Rubu’ al-Mujayyab Media................................................................................................................................. 293

Muhammad Hidayat, Edi Syahputra, E. Elvis Napitupulu

The Impact of Education Cost and Government Spending the Interest Rate of Bank Indonesia Subtitle................................................................................................................................. 297

Julika Rahma Siagian, Dede Ruslan, Arwansyah

The Implementation of Problem Based Learning Models to Improve Mathematical Problem Solving Ability of Students on Arithmetic Materials in Class VII Junior High School................................................................................................................................. 301

Elidar Tanjun, Izwita Dewi, Mulyono

The Effect of Learning Strategies to Trial By Jury in Participainton Mathematics Learning Student of Junior High School................................................................................................................................. 305

Rizka Putri Rahaya, Ani Minami, Zul Amry

The Differences Between The Effect of Realistic Mathematics Learning Approach to Conventional Learning with The Students Mathematics Learning Outcomes in Junior High School of 38 Medan Grade VII............ 309

Diah Ari Saputra, Syafari

The Effect of Value National Exam Standards at Learning Achievement of Students at Senior High School................................................................................................................................. 312

Nurdiana Fahmi, Bornok Sinaga, W. Rajagukguk

The Effect of Open Unemployment Rate and Level of Vocational High Education to Poverty in North Sumatera Province................................................................................................................................. 315

Zulaili, Indra Maipita

The Application of Cooperative Learning of Think-Pair-Share (TPS) Type to Increase the Students’ Ability of Problem-Solving................................................................................................................................. 320

Madriqah Fadhilah Siregar, Zul Amry, Syafari

The Relationship Between Metacognitive With the Results of Learning Outcomes on the Fungi Topic.. 324

Elizabeth, Herbert Sipahutar, Syahmi Edi

Comparison of DNA Isolation Methods from Economically Valuable Plants in Indonesia................................................................................................................................. 327

Chairiyani Rizka, Fauziyah Harahap, Syahmi Edi

Development of Learning Device Based on Realistic Approach to Improve Problem Solving Ability Mathematic of Student at Junior High School................................................................................................................................. 333

Susanna Romaria Harahap
Efforts to Improve Understanding and Use Concept of Additive Fractions and Reduction Using Media Comics on Model Cooperative Learning Type Student Team Achievement Division (STAD)................. 339
Ratu Natalia Perangin-angin, Sahat Siahaan
The Effect of Cooperative Learning Type Games Teams Tournament (TGT) of Mathematics Learning Outcomes in the Fractions Matter.......................................................................................... 342
Ansori Hasibuan, Asmin Panjaitan, Asrin Lubis
Development of Authentic Mathematics Assessment in Application of Problem Based Learning Model to Improve Problem Solving Ability and Understanding of Student Mathematics Concept at Namorambe Secondary Private Middle School Junior High.................................................................................... 347
Kartika Sari, Asmin, Bornok Sinaga
The Increasing of Student’s Mathematics Problem Solving Ability and Learning Motivation Through Problem Based Learning Model.................................................................................................. 351
Ridha Maulida
Dialect of Batakinese Language Used by Senior High School Students’................................................................................................................................. 358
Rafika Nur Rahman
The Effectiveness of Tandur Method of Improving Students’ Learning Ability in Junior High School...................................................................................................................... 362
Rahimatul Islam Elmujaiahidah, Mulyono, H. Banjarnahor
The Effect of Reciprocal Teaching Approach to Student Achievement on Ecosystem Topic in Junior High School........................................................................................................................... 365
Nilawati, Nurtika Dewi
Improvement of Student Learning Result by Using Cooperative Learning Model of Teams Games Tournament Type on Algebra Function Limit.......................................................................................... 367
Rismalyah Manalu, E. Elvis Napitupulu, Martua Manullang
Noun Phrase of Culture Articles in The Jakarta Post................................................................................................................................. 371
Misdana
Application of Cooperative Learning Model Type Think Pair Share for Improved Communication................................................................................................................................. 374
Nurhasanah
Implementation Model of School Policy in Constructing Behavior of Troubled Students................................................................. 378
Khairtati Purnama Nasution, H. Syaiful Sagala
Efforts to Improving Creativity and Mathematics Learning Outcomes of Students With SPLET Strategy................................................................................................................................. 382
Antoni
The Influence of Physical Education in Establishment of Self Esteem...................................................................................................................... 386
Yustinus Tarigan, Tarsyati Nugraha
The Improvement of Dance Art Learning Achievement for Deaf Students Through Total Communication Application (Gesture/Signal) in Sekolah Luar Biasa (SLB) - E Negeri Pembina Tingkat Provinsi Sumatera Utara................................................................................................................................. 390
Siti Maryam
Innovation of Media Video Compact Disc Instructional Pencak Silat for High School................................................................................................................................. 393
Marli Perangin-angin, Imran Akhmad, Agung Sunarno
Achievement Strategy of the Indonesian National Qualification Framework Based Curriculum Generic Description of Sport Education Postgraduate Program Universitas Negeri Medan................................................................................................................................. 397
Muhammad Supradi Siregar, Nurhayati Simatupang, Albadi Sinulingga
The Effect of Teaching Styles and Motor Ability as The Result of Study Dribbling Football................................................................................................................................. 401
Muhammad Fajar Doli Siregar
Semantic Analysis of English Loan Words in Indonesian Electronic Paper (Analisa)................................................................................................................................. 404
Putri Nurul Rahmadani Siregar
Analysis of Empowerment of Competence Sinergy on Optimization of Education System................................................................................................................................. 408
Rameyanti Tampubolon
Inquiry-Based Video Learning Media For Overcoming Student Learning Difficulty (Case Study at State Junior High School 3 Lubuk Pakam Deliserdang District)................................................................................................................................. 412
Megawati
The Development of Mathematics learning Tool Oriented on Problem Based Learning to Enhance Mathematics Problem Solving Ability and Self Efficacy
Solawati Nainggolan, Mulyono, Hasratuddin

The Effectiveness of Contextual Inquiry-Based Worksheet on the Matter of Fungi on Food Towards Students’ Higher-Order Thinking and Science Process Skills of Biology Education
Nurjamiah Siregar, Hasruddin, Syahmi Edi

The Function of Limits Mastery on Mathematics Learning Achievement in Derivative Subject at the Eleventh Grade of Madrasah Aliyah Yayasan Pendidikan Karya Setia Padangsidimpuan
Hasna Dewi Ritonga

Effect of Education Level, Income, Inflation on Community Consumption Pattern in North Sumatera Province
Nelly Hutajulu, Fitrawaty, M.Fitri Rahmadana

Application of Problem Based Learning Model Assisted by Cabri Software to Improve Problem Solving Ability of Mathematics Students
Ahmad Darmawan, Edi Syahputra, Kms. M. Amin Fauzi

Optimization of Academic Supervision Competence of High School Supervisor in Karo Regency with Critical Events Model (CEM)
Karyawan Keliat, Yasaratodo Wau, Irsan

The Concept of Physics Learning Media Based Computer Animation
Ratna Tanjung, Mukhtar, Efendi Napitupulu

Cultivating Children’s Critical Attitude with Educational Philosophy
Daulat Saragi
Efforts to Improve Understanding and Use Concept of Additive Fractions and Reduction Using Media Comics on Model Cooperative Learning Type Student Team Achievement Division (STAD)

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Abstract—This study aims to improve the understanding and use of the concept of fractions to the addition and subtraction using comics media through cooperative learning type STAD in teaching materials fractions in fourth grade elementary school 064025 T.A. 2014/2015. Subjects in this study were students of class IV-B totaling 33 people. This type of research is the Classroom Action Research (PTK). Criteria for success of this study is if you reach your goal every indicator ≥ 65%. In the first cycle by the students have been able to understand the concept (distinguishing example and not an example) as much as 57.58%, the students have been able to use the concept of the sum of as much as 69.69%, the students have been able to use the concept of reduction of as much as 42.42%, and the students have been able uses the concept of a combined 60.61%. In the second cycle was obtained 96.97% of students have been able to understand the concept, 75.76% of students have been able to use the concept of addition, 72.73% of students have been able to use the concept of subtraction, and 78.79% students have able to use the combined concept. Based on the above inferred using comics media through STAD cooperative learning model can improve the understanding and use of the concept of fractions to the addition and subtraction.

Keywords—understanding and using concepts denomination; media comics; cooperative learning STAD

I. INTRODUCTION

According to the Education For All Global Monitoring Report 2012 issued by UNESCO annually (http://www.unimomo.ac.id/), education in Indonesia is ranked 64th for education worldwide from 120 countries. Data Education Development Index (EDI), Indonesia, in 2011 Indonesia was ranked 69th out of 127 countries.

Education is one of the important factors in the development of a country. Education is also a vehicle to improve and develop the quality of human resources. The development of education is rapidly increasing, requires educational institutions to work better in adjusting to the development of science education in our country.

Mathematics is one of the very important field of study in education, both for students and for the development of other disciplines. Position of mathematics in education is very beneficial because mathematics is an educational vehicle that has a meaningful contribution to the future of the nation, especially in the intellectual life of the nation. Moreover, mathematics is also inseparable from science and technology. This is due to the learning of mathematics anyone can develop the ability to think mathematically, logically, critically, creatively and skillfully to solve problems in everyday life.

This is supported by a statement Cocrof (in Abdurahman, 2003) argues that: Mathematical need idajarkan to students because it (1) is always used in all of life, (2) all boding studies require math skills appropriate, (3) requires the target of strong communication, (4) can be used to present information in a variety of ways, (5) improve the ability to think logically, accuracy, and awareness of the room, and (6) give satisfaction to the efforts to solve challenging problems.

But the reality is often the case and face, mathematics is one of the subjects that are very difficult to study, boring, not interested to learn lessons daunting, ranging from education elementary, junior high, high school and even through college. Thus, understanding and mastery of math concepts students is reduced, resulting in student learning outcomes in mathematics has an average value is low.

The material is one of the subjects taught in school fourth grade is fractional. With sub discussion fractions studied by researchers is addition and subtraction of fractions. Here, the students are expected to understand and be able to use the
concept of fractions on the operations of addition and subtraction so that the material and high school students do not feel the confusion in understanding and using the concept of fractions on the operations of addition and subtraction. Because so far there are still many high school students are still confusion in understanding the concept of fractions and master the concept of fractions on the operations of addition and subtraction.

Based on the results of diagnostic tests conducted by researchers at the fourth grade primary school 064 025 Tanjung Selamat conducted on August 5, 2014 obtained a problem where researchers get 3 (9.09%) persons from 33 students have not been able to achieve sufficient category in solving diagnostic tests, with details of 28 (84.85%) students are still not able to achieve the minimum category enough to understand the concept, then 13 (39.39%) students have not been able to achieve minimal category enough in using the concept in addition, 29 (87.88 %) person has not been able to achieve minimal category enough in using the concept of reduction and 24 (72.73%) of people have not been able to achieve minimal category enough in using the concepts of addition and subtraction.

And based on the debriefing conducted by researchers to the three teachers say that students' lack of interest, lack of motivation, and attention given to students who come from outside especially those of parents who cause the child is not in the spirit of learning. Attention in question is to see the development of children's learning in school, teach or supervise children in learning. Not only that, the lack of communication to cooperate between parents and teachers in educating and teaching the child.

Based on that data, mathematical learning still needs to be increased again by making changes in the learning process. Changes in the learning process carried out by teachers, for teachers is an important factor in the overall education system. Teaching styles and media used in the delivery of learning materials that have a teacher to determine the success of learning mathematics As Soemosasmito (in Trianto, 2009):

Effective teachers are teachers who find ways and always trying to get her students involved appropriately in a subject by the presentation of high academic learning time and learning to walk without the use of force techniques, negative or punishment.

As for the changes in the learning process that will be conducted by researchers is to use different models and learning media. The learning model used in this study is a cooperative learning model type STAD. This model is ideal to use on students because the students happy in doing math problems to discuss. And the media used in this study is a comic media since students are still in play.

By using this model, teachers formed a discussion group consisting of sexes and different abilities. Then the teacher presents the material to be taught before teachers give assignments to students for discussion groups with friends group. After the discussion finished, the teacher gives a test individually to see how each member of the group and individual responsibility. In doing these tests, students are not allowed to cooperate among group members but rather the student to take the test individually.

By using the medium of comics through STAD cooperative models, researchers are expected to make changes for the students of SD Negeri 064 025 Tanjung Selamat in the study material especially its fractions in the material addition and subtraction so that the students' understanding and use of the concept increasing.

II. METHODS

This research was conducted in SD Negeri Tanjung Selamat 064 025 which is located at the Flamboyan Raya near Medan Housing Tuntungan. The research was conducted in the fourth grade the first semester of Academic Year 2014/2015. Subjects in this study were students of class IV-B 064 025 Tanjung Selamat Elementary School Academic Year 2014/2015 as many as 33 people. Which is the object of this research is to increase understanding and use of the concept of fractions to the addition and subtraction using comics media through cooperative learning model STAD in fourth grade elementary school Tanjung Selamat 064025 Academic Year 2014/2015. This research is a classroom action research.

III. RESULT AND DISCUSSION

Based on the achievement of results obtained in early diagnostic tests and diagnostic tests the understanding and use of the concept in the first cycle, the data obtained in the following Table 1

<table>
<thead>
<tr>
<th>performance indicators</th>
<th>Early Category</th>
<th>first cycle Category</th>
<th>Target Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understanding the concept</td>
<td>15.15 Very bad</td>
<td>57.58 Bad</td>
<td>65 Pretty good</td>
</tr>
<tr>
<td>Using the concept of summation</td>
<td>60.61 Bad</td>
<td>69.69 Pretty good</td>
<td>70 Pretty good</td>
</tr>
<tr>
<td>Using the concept of reduction</td>
<td>12.12 Very bad</td>
<td>42.42 Very bad</td>
<td>65 Pretty good</td>
</tr>
<tr>
<td>Using the concepts of addition and subtraction</td>
<td>27.27 Very bad</td>
<td>60.61 Bad</td>
<td>65 Pretty good</td>
</tr>
</tbody>
</table>

According to the table above, obtained the category on one aspect of the understanding and use of the concept has increased but in other aspects decline. If seen from the initial diagnostic test showed that the percentage of students who understand the concept as much as 15.15% (Very bad), but after learning by using comics media through kooperatif...
STAD learning model, increased to 57.58% (Poor). Similarly, the percentage of students who use the concept of the sum of as much as 60.61% (recent), increased to 69.69% (Pretty good). Likewise, the percentage of students who use the concept of reduction of as much as 12.12% (Very bad), having taught using the medium of comics through cooperative learning model STAD increased become 42.42%. (Very bad). And the last with the percentage of students who were able to use the concept of addition and subtraction of as much as 27.27% (Very bad), increased to 60.61% (Poor).

Meaning it can be concluded that an increase in the percentage of students at each aspect of the understanding and use of the concept, but has not reached the specified targets on performance indicators. Thus, the problem on the understanding and use of mathematical concepts students unresolved then learning should be continued in cycle II.

Meaning it can be concluded that the use of media comics through kooperatif STAD learning model needs to be done next cycle with the additional refinement of the previous cycle.

Based on the achievement of results obtained in the initial diagnostic tests, diagnostic tests understanding of the concept of the I and diagnostic tests understanding of the concept in the second cycle, the data obtained in the following Table 2

<table>
<thead>
<tr>
<th>Performance Indicator</th>
<th>Category %</th>
<th>Category</th>
<th>Category %</th>
<th>Category</th>
<th>Category</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understanding the concept of addition and subtraction</td>
<td>15.15</td>
<td>Very bad</td>
<td>57.58</td>
<td>Bad</td>
<td>96.97</td>
<td>Very good</td>
</tr>
<tr>
<td>Using the concept of addition</td>
<td>60.61</td>
<td>Bad</td>
<td>69.69</td>
<td>Pretty good</td>
<td>75.76</td>
<td>Pretty good</td>
</tr>
<tr>
<td>Using the concept of subtraction</td>
<td>12.12</td>
<td>Very bad</td>
<td>42.42</td>
<td>Very bad</td>
<td>72.73</td>
<td>Pretty good</td>
</tr>
<tr>
<td>Using the concepts of addition and subtraction</td>
<td>27.27</td>
<td>Very bad</td>
<td>60.61</td>
<td>Bad</td>
<td>76.79</td>
<td>Pretty good</td>
</tr>
</tbody>
</table>

According to the table above, obtained the category in every aspect of the understanding and use of the concept has increased, the percentage of students who understand the concept of 15.15% (Very bad), but after learning by using comics media through cooperative learning model STAD in the first cycle increased to be 57.58% (recent) and after repair on the second cycle increased to 96.97% (Very good). Likewise, the percentage of students who are able to use the concept of the sum of the initial diagnostic test as much as 60.61% (bad), but after learning by using comics media through cooperative learning model STAD in the first cycle increased to 69.69% (Pretty Good) and after repair on the second cycle increased to 75.76% (Pretty good). Likewise, the percentage of students who are able to use the concepts of addition and subtraction in the initial diagnostic test as much as 27.27% (Very bad), but after learning by using comics media through cooperative learning model STAD in the first cycle increased to 60.61 % (recent) and after repair on the second cycle increased to 78.79% (Pretty good).

Meaning it can be concluded that an increase in the percentage of students at each aspect of the understanding and use of the concept and all aspects have reached the specified targets on performance indicators. Meaning it can be concluded that the problem of understanding and use of mathematical concepts students have been resolved and the use of media comics through kooperatif STAD learning model has been performed optimally, so no need to do the next cycle.

The results of the final value of observation learning cycle I was 70 with enough categories. In the implementation of the teacher is not motivating to students and explain the purpose of learning. And at the end of the second cycle of observation learning value is 88.44 with very good category. In doing so, the teacher has to motivate the students well and the teacher had explained the purpose of learning well.

The final value of the observation activities of the students in the first cycle is not good 50 categories. In practice, there are still students who do not listen and pay attention to the teacher’s explanations, the involvement of students in learning by using comics media in receiving less anxious learning and students’ ability to take tests understanding and use of the concept of the material being discussed is also lacking. While on the second cycle students’ final grades observation activity was 82.14 with both categories. In practice, all students had to listen and pay attention to the explanation of the teacher, student involvement in learning by using comics media in accepting the teaching has improved, and the ability of students to take the test the understanding and use of the concept of the material being discussed is already good.

IV. CONCLUSION

Based on the results of the research presented in Chapter IV it could be concluded as follows:
1. Understanding and use of the concept of fractions to the addition and subtraction in the fourth grade Tanjung Selamat Negeri 064 025 Academic Year 2014/2015 increased by using the medium of comics through cooperative learning model STAD.
2. The process is done in the classroom in order to increase student achievement is good.

REFERENCES