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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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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 universties 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 excels the first one related to the administration by online and the publication index by either Thomson Reuters or Google Scholarr. 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 inovative 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
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Cultivating Children’s Critical Attitude with Educational Philosophy
Daulat Saragi
Analysis of Empowerment of Competence Sinergy on Optimization of Education System

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Abstract—The problems of education and teaching system in schools are still frequent. Schools or educational institutions that run without a good system, all components are not coordinated well, many of the components are not running effectively and efficiently. This study aims to determine the extent to which the Effectiveness of Synergy Empowerment Efficiency Against Educational System Optimization, especially in the process of learning chemistry for high school level. The population is the students of Senior High School Class II which amounts to 50 people who also at the same time become the sample (total sampling). The research method is quantitative method with multiple regression analysis. This study has variable empowerment of competency synergy as independent variable and consist of teacher competence variable (X1), student competence (X2) and accessibility competence (X3) and education system optimization (Y) as variable dependent. The result of the research stated that both through t test and f test, the empowerment of competency synergy as independent variable and terdir from teacher competence variable (X1), student competence (X2) and accessibility competence (X3) have influence above 50% and significant with α <0.05 to the optimization of the education system. The CONCLUSION of this research is the empowerment of synergy competence influence to optimization of education system. It is suggested that the optimization of education system needs to be implemented through teacher competence, student competence and accessibility competency for high school students.

Keywords: empowerment, synergy, competence, education system optimization

I. INTRODUCTION

The problems of education and teaching system in schools are still frequent. Schools or educational institutions that run without a good system, all components are not coordinated well, many of the components are not running effectively and efficiently. Regarding the issue of education, the attention of our government still feels very minimal. This picture is reflected in the growing diversity of educational issues. The quality of students is still low, the teachers are less professional, the cost of education is expensive, even the rules of education law is chaotic. The impact of poor education, our country in the future getting worse. This deterioration can also result from the small average allocation of education budget at the national, provincial, and city levels.

And districts. The low academic quality, especially the mastery of natural science (IPA), mathematics, and language, especially English, while the mastery of the material is the key in mastering and developing science and technology.

Problem Optimization of the education system in Indonesia is heavily influenced by various factors. One of the factors influencing optimization of education system in Indonesia is teacher competency factor. Pedagogic competence includes the teacher's understanding of the learners, the design and implementation of the learning, evaluation of learning outcomes, and the development of learners to actualize the various potentials they have. Personality competence is a personal ability that reflects a steady, stable, mature, wise and authoritative personality, role models for learners, and noble character. Social competence is the ability of teachers to communicate and socialize effectively with learners, fellow educators, education personnel, parents / guardians of students, and the surrounding community. Professional competence is a mastery of learning materials in a broad and deep, which includes the mastery of curriculum material subjects in schools and scientific substances that overshadow the material, and mastery of the structure and methodology of science.

Teachers are a reflected component in the implementation of Human Resource development (SDM) and occupy a key position in the National Education System (Sisdiknas). The impact of professional quality and teacher performance will not only contribute to the quality of the graduates produced (output) but will also continue to the quality of performance and services of the graduates (outcomes) in development, which in turn will then affect the quality of civilization and the dignity of life Society, nation and mankind in general.

The Jakarta Consulting Group (Susanto, 2002) provides the limitation that competence is any form of embodiment, expression, and representation of motives, knowledge, attitudes, main behaviors in order to be able to perform the job very well or distinguish between average performance and superior performance.

But besides that there are factors that affect the optimization of the quality of education is the lack of Accessibility Competence. This can be seen from the start of low government commitment, minimum welfare, inadequate guidance and protection of professions, quality of inputs, LPTK as an institution that produces teachers, to the very low teacher performance problems. The problem is directly or
indirectly related to the problem of teacher professionalism quality that is still not adequate. Yet it is very clear that it also determines the quality of national education. The quality of national education is low, one of the causes is the low quality of teachers. The above problems are closely related to constraints such as geographic, demographic, and socio-economic conditions. The large number of people scattered throughout Indonesia’s geographical area is quite wide. Poverty is also one of the obstacles that have a close relationship with educational problems. The low quality of education system performance is not only caused by the weakness of educational management of micro level of educational institution, but also education management at macro level like low efficiency and effectiveness of processing of education system. The system and the life of the society are not conducive to determine the low quality of education system in schools which in turn causes the low quality of students and graduates. The policies and programs aimed at addressing the above issues should be specified as the phenomenon and causes of problems also vary across Indonesia (Eti, et al., 2006).

Student competence is also a factor affecting the low performance of the education system. Competency ability of students is the ability that must be possessed / achieved by students after following the learning (Watson Wyatt in Ruhy, 2003), Robert A. Roe, 2001). Aspects of student competence are Knowledge, Skills, Values, and Attitudes reflected in thinking and acting habits.

In addition to the competence of teachers and competence of students, who need a special study is the Accessibility Competency. Accessibility is the competence of collective learning within the organization, especially to coordinate a variety of production skills and integrate multiple technology paths. Competencies must meet three criteria, namely (1) providing potential access to a wide range of markets, (2) contributing significantly to product benefits end received by the customer, and (3) difficult to imitate by competitors. The Aspects of Accessibilities Competencies are Government Commitment & Stakeholders, Welfare, Development and Professional Protection, Quality of Inputs, LPTKs, Geographic, Demographic and Socio-economic Conditions, Poverty, Management of Macro-level and Micro Education Institutions, Efficiency and Effectiveness of Processing Education system, system and life order of society not conducive and quality of learners and graduates.

Problem Formulation

The formulation of the problem is a fundamental part and is the first step of a research activity. The formulation of the problem should be tailored to the title of the study because the problem becomes the basis for further discussion. Based on the above description, the researcher formulates the following issues:

- Does Teacher Competence Empowerment have an influence on Education System Optimization?
- Does Student Competence Have an Effect on Education System Optimization?
- Does Accessibility Competence have any effect on Education System Optimization?
- Is Empowerment of Teacher Competence, Student Competency and Accessibility Competence together have an effect on Education System Optimization?

Research Objectives

The purpose of this study are:

- To determine whether the Empowerment of Teacher Competence has an influence on Education System Optimization
- To know whether Student Competence has an effect on Education System Optimization
- To know whether Accessibility Competence has an effect on Education System Optimization
- To determine whether the Empowerment of Teacher Competence, Student Competence and Accessibility Competence together have an influence on Education System Optimization

Theoretical Studies / Concepts

Optimization of National Education System

The National Education System is a fully integrated element of educational components in order to achieve the goals of national education. National education is an education based on Pancasila & the 1945 Constitution which is based on the values of religion, national culture of Indonesia & responsive to the demands of changing times. Optimization of education system seen from Institutional aspect, Program, Management of education.

Teacher Competence

Teacher competence is the authority and ability or ability of the teacher in performing task or job in accordance with his position. Competence teachers comprised pedagogic competencies that include understanding of teachers to learners, design and implementation of learning, evaluation of learning outcomes, and development of learners to actualize various potential it has. Personality competence is a personal ability that reflects a steady, stable, mature, wise, and authoritative personality, a role model for learners, and noble character. Social competence is the ability of teachers to communicate and socialize effectively with learners, fellow educators, education personnel, parents / guardians of students, and the surrounding community. Professional competence is a mastery of learning materials in a broad and deep, which includes the mastery of curriculum material subjects in schools and scientific substances that overshadow the material, and mastery of the structure and methodology of science.

Student Competence

Competency ability of students is the ability that must be possessed / achieved by students after following the learning (Watson Wyatt in Ruhy, 2003), Robert A. Roe, 2001).
Aspects of student competence are Knowledge, Skills, Values, and Attitudes reflected in thinking and acting habits.

**Accessibility Competencies**

Collective learning within the organization, especially to coordinate multiple production skills and integrate multiple technology paths Competency must meet three criteria: (1) providing potential access to a wide range of markets, (2) contributing significantly to the benefits of end products received by consumers, And (3) difficult to imitate by competitor.

II. METHOD

The method used is a quantitative combination method. The population in this study is the students of Class II SLTA amounting to 50 people. The sample in this study amounted to 50 students. Data analysis is done by multiple linear regression analysis that is to know the steering between two independent variable (X) that is Teacher Competence (X1), Student Competency (X2) and Accessibility Competency (X3) with dependent variable of Optimization of Education System (Y). This analysis is to know the direction of the relationship between independent variables with dependent variable whether positive or negative and to predict the value of dependent variable if the value of independent variable increase or decrease. Furthermore, T test and F test are used to determine whether the independent variable (X) significantly influence the dependent variable (Y).

III. RESULTS AND DISCUSSION

Based on descriptive analysis, it was found that female gender was 29 (58%), and male respondent was 21 (42%). It can be stated that the majority of respondents are female respondent's gender. Age of respondents with the highest number is the age group of 16 years, ie as many as 42 people (87.5%), then the age group of respondents with the smallest number is the age group 17 years as many as 2 people (4%). It can be stated that the majority of respondents are 16 years old.

Based on sample data with 50 respondents, the following scores were obtained: theoretical score between 22 to 40; Mean of 31.75; median of 32.50; and a standard deviation of 5,203. In proving the tendency of Values of Teacher Competence (X1), the researcher in this case establishes 3 (three) categories (k) namely: (a) Height; (B) Medium; (c). Low. Based on the results of descriptive statistical test of the variable Competency of Teachers (X1) found the interval of: Range divided by category 18: 3 = 6. Based on these findings can be made table category and position Teacher Competency Values (X1) is the interval 30.59-32.91 with Medium category.

Based on the sample data with 50 respondents, the following scores were obtained: theoretical score between 23 to 36; Mean of 82.49; median of 83.00; and standard deviation of 8,744. The overall picture is like the table below. In proving the tendency of revitalization aspect of Student Competence (X2), the researcher in this case specifies 3 (three) categories (k) namely: (a) High; (B) Medium; (c) Low. Based on the results of statistical test descriptive of Student Competency variable (X2) found the interval of: Range divided by category 43: 3 = 14.3 rounding 14. Based on these findings can be made table and position of Student Competency (X2) is in the interval 31.54- 54.43 with Medium category.

Based on the sample data with 50 respondents, the following scores were obtained: theoretical score between 23 to 36; Mean of 82.49; Median of 83.00; And standard deviation of 8,744. The overall picture is like the table below. In proving the tendency of Accessibility Competence (X3), the researcher in this case establishes 3 (three) categories (k) namely: (a) Height; (B) Medium; (C) Low. Based on the results of descriptive statistical tests of Accessibility Competence (X3) variables found the interval of: Range divided by category 43: 3 = 14.3 rounding 14. Based on these findings can be made table category and position Accessibility Competency (X3) is in the interval 81.54-84.43 with High category.
Table 1: Regression Analysis Results

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.792*</td>
<td>.627</td>
<td>.334</td>
<td>.156</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Aspects of Teacher Competence (X1), Student Competency (X2), Accessibility Competence (X3)

Based on the above table, found the value of ryx, amounted to 0.792 and positive value which means, the magnitude of the relationship between Teacher Competence (X1), Student Competency (X2), Accessibility competence (X3) on Education System optimization is 0.792. From the results Analysis also obtained value of ryyx2 (coefficient of determination) equal to 0.627 or 62.7%. This means that the contribution of teacher competence (X1), Student Competency (X2), Accessibility Competence (X3) to Education System optimization is 62.7% while the rest of 37.3% is explained by other causes outside the research model.

Table 2: Test of simple correlation significance between X1, X2 and X3 with Y

<table>
<thead>
<tr>
<th>Koefisien*</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1 (Constants)</td>
<td>1.838</td>
<td>0.176</td>
<td></td>
<td>10.465</td>
</tr>
<tr>
<td>Master's Competencies (X1)</td>
<td>0.306</td>
<td>0.004</td>
<td>0.164</td>
<td>4.683</td>
</tr>
<tr>
<td>Student Competency (X2)</td>
<td>0.414</td>
<td>0.102</td>
<td>0.518</td>
<td>5.321</td>
</tr>
<tr>
<td>Accessibility Competencies (X3)</td>
<td>0.811</td>
<td>0.302</td>
<td>0.518</td>
<td>8.321</td>
</tr>
</tbody>
</table>

Based on the above table, found the value of ryx, amounted to 0.792 and positive value which means, the magnitude of the relationship between Teacher Competence (X1), Student Competency (X2), Accessibility competence (X3) on Education System optimization is 0.792. From the results analysis also obtained value of ryyx2 (coefficient of determination) equal to 0.627 or 62.7%. This means that the contribution of teacher competence (X1), Student Competency (X2), Accessibility Competence (X3) to Education System optimization is 62.7% while the rest of 37.3% is explained by other causes outside the research model.

When viewed from the population, obtained t value of 4.683, 5.321 and 8.321 and was very significant at α <0.05. Means, teacher competence variables (X1), Student Competency (X2), Accessibility competence (X3) is significant effect on Education System Optimization at α <0.05. Adapun linear regression line equation produced $\hat{Y} = 1.838 + 0.306 X1 + 0.411X2 + 0.811X3$ This means that every Teacher Competency (X1), Student Competency (X2), Accessibility Competence (X3) increases once, the optimum development of the Education System will increase 0.036 times, 0.414 and 0.811 times.

The national education system is an integral whole and interconnected and connected in a system to achieve the goals of national education in general. Educational system optimization is required through teacher competence, student competence and accessibility competency. Starting from the assumption that life is education and education is life is in the sense of education as a matter of life and life, the discourse about education is one of the most interesting topics. There are at least two reasons that can be identified so that education remains up to date for review. First, the need for education is essentially crucial because it is directly related to the realm of life and human life. Talking about education means talking about the primary human need. Secondly, education is also a strategic vehicle for improving the quality of human life, which is characterized by increasing levels of welfare, declining poverty levels and opening of alternative options and opportunities for self-actualization in the future. At the level of value, education has a vital role as an incentive for individuals and citizens to achieve progressivity in all areas of life. In addition, education can be an important determinant of personal and social transformation processes. And indeed this is the educational idealism that requires empowerment.

IV. CONCLUSION

Based on the above table, found the value of ryx, amounted to 0.792 and positive value which means, the magnitude of the relationship between Teacher Competence (X1), Student Competency (X2), Accessibility competence (X3) on Education System optimization is 0.792. From the results analysis also obtained value of ryyx2 (coefficient of determination) equal to 0.627 or 62.7%. This means that the contribution of teacher competence (X1), Student Competency (X2), Accessibility Competence (X3) to Education System optimization is 62.7% while the rest of 37.3% is explained by other causes outside the research model.

REFERENCES