A STUDY OF TEACHING METHODS AND TECHNIQUES FOR THE MATHEMATICS OUTSTANDING TEACHERS UNDER THE BASIC EDUCATION OF THAILAND

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Abstract - In this descriptive study, this research were to study teaching methods and techniques for the mathematics outstanding teachers under the basic education of The North East. The population of this study was limited to the outstanding teachers at Secretarial Office of the teachers' Council of The North East. during 2016 – 2017. The sample consisted of 12 from 2 province, were purposively selected. Data was collected through classroom observations, study lesson plan, and interviews. Content analysis method was employed in the data analysis. Frequency percentage and mean were used as statistical tools. The results indicated that: 1. Generally, Mathematic outstanding teachers used the small-group discussion method, deductive method, case, Simulation, Problem-based learning, Game, and Inquiry as their main teaching methods. 2. Mathematic outstanding teachers used technique considering in each stage of teaching and learning activities

Keywords - Teaching methods, techniques for the Mathematics Outstanding Teachers

I. INTRODUCTION

Educational systems consist of many elements, including students, teachers, curriculum, administrators, specialists, technology, physical and financial resources. However, teachers are the essential element, since quality of the education mostly depends on the quality and competence of teachers

Teachers' preferences and opinions regarding pedagogical techniques in mathematics courses are important, because they may reveal their ability to address the needs of students at different learning levels. The study began with a self-evaluation of the teachers' strengths and weaknesses regarding their teaching preferences. As teachers develop their teaching skills, they may help students integrate their mathematical knowledge with other activities, and find out what works best for their personalities and curriculum

The Unesco 2017-2018 Global Education Monitoring Report's criticism of the Thai education focused on familiar failings. Half the country's grade nine students have only a minimum level of proficiency in mathematics and reading, half the country's pupils are taught in a language that is not their mother tongue, and 3.9 million adults in Thailand are unable to read simple sentences.

These findings echo the annual shaming that the country's Ordinary National Educational Test (O-Net) provides. The 2016-2017 O-Net standardised test results for Grade 12 students provide an even bleaker picture than the Unesco report, with the national average scores in mathematics at 24.9%, English at 27.8%, and science at 31.6%. Not only are these results diabolical, but they also confirm a downward spiral, with scores lower than those for the 2015/2016 academic year, when the national averages for mathematics and science were 26.6% and 33.4%.

Thailand's education problems were detailed in the World Development Report 2018 on "Learning to Realise Education's Promise", which warned of a global education crisis. The World Bank report was released by the World Bank Group President, who stated, "This learning crisis is a moral and economic crisis," explaining, "When delivered well, education promises young people employment, better earnings, good health and a life without poverty… But, these benefits depend on learning, and schooling without learning is a wasted opportunity. More than that, it's a great injustice: The children whom societies fail the most are the ones who are most in need of a good education to succeed in life."

This wasted opportunity is a great injustice for millions of Thai learners, as education fails to empower them with the skills necessary to improve their circumstances. The failure of national education impacts disadvantaged students most heavily, creating a widening social gap between the poor and those who can afford private education and tutoring.
Teachers have many roles, from planning classroom activities, to instructing, disciplining, motivating and guiding students. Teachers are also expected to both use teaching techniques effectively and to have modern management skills in classroom environments in order to establish learning that can be defined as permanent changes in behavior. Teaching mathematics is related to more than one variable as well as to other disciplines. The primary goal of efficient mathematical teaching is to transfer

mathematical knowledge in a way that allows students to adapt to new situations and knowledge.
Mathematics is an important subject that develops human's thoughts and initiate ideas to think systematically and logically. It helps to analyze situations and hypothesize, plan and solve problems appropriately. It is the instrument that related to the study of science and technology too (Ministry of Education, 2009: 47). Mathematics is the subject that prepares a person to learn for future (Vannee Somprayoon, 1998: 15-16). Based on the various studies, even though Mathematics is an important subject, but the achievement of Mathematics learning and teaching is still low (Ministry of Education, 2005: 2).Students' concepts analysis skills at basic educational level also low (Sombat Karnjanarakpong (2006: 3-4).

II. DETAILS EXPERIMENTAL

2.1. Materials and Procedures

The aims of this research were to study teaching methods and techniques for the mathematics outstanding teachers under the basic education of The North East

The population of this study was limited to the outstanding teachers at Secretarial Office of the teachers' Council of The North East. during 2016 – 2017. The sample consisted of 12 from 4 province, were purposively selected.

Data was collected through classroom observations, study lesson plan, and interviews. Content analysis method was employed in the data analysis. Frequency percentage and mean were used as statistical tools.

III. RESULTS AND DISCUSSION

The results indicated that:
Generally, Mathematic outstanding teachers used the small-group discussion method, deductive method, case, Simulation, Problem-based learning, Game, and Inquiry as their main teaching methods.
Mathematic outstanding teachers used technique considering in each stage of teaching and learning activities, Introduction stage, the main teaching techniques of the outstanding teachers were verbal and nonverbal communication. The teaching stage, the main teaching techniques of outstanding teachers were explanation, verbal and nonverbal communication, using of instructional medias, motivation, reinforcement, question, group process, drill and practice, thinking development and virtue and amusement creation techniques. In addition, for the conclusion stage, the main teaching techniques of the outstanding teachers were question, thinking development, conclusion, verbal and nonverbal communication and verbal and nonverbal communication.

CONCLUSIONS

1. Generally, Mathematic outstanding teachers used the small-group discussion method, deductive method, case, Simulation, Problem-based learning, Game, and Inquiry as their main teaching methods and Zdravko Kurnik (2008) THE SCIENTIFIC APPROACH TO TEACHING MATH describes science in various segments of math teaching starting with the nature of math to mathematical tasks as an important method in shaping the system of basic mathematical knowledge, abilities and habits in students. In the end, some drawbacks in math teaching are mentioned which occur due to the inappropriate treatment of science in the teaching process. Mkandawire Chidongo (2013)The study was conducted in Petauke district, which lies in the Eastern Province of Zambia.The research employed a combination of both qualitative and quantitative methods toobtain rich information for in-depth analysis of the central issues under study. Thestudy sample comprised 24 teachers of mathematics, 4 heads of mathematicsdepartment and 120 Grade 11 pupils (boys and girls), 80 were assigned to answer thequestionnaires and 40 were involved in the focus group discussions from the four
selected secondary schools in Petauke district. Four research instruments (observations, interview schedules, focus group discussions and questionnaires) were used to collect the necessary data in order to address the objectives of the study.
Qualitative data collected were analysed using the constant comparative method, the software, Statistical Package for Social Sciences (SPSS) version 16 was used to perform a variety of statistical analysis to analyse quantitative data.The key findings were that the majority of the questions which teachers of
mathematics asked during mathematics lessons were in the low-cognitive level category. The predominance of lower levels questions asked by teachers of mathematics indicated also that questioning had been used in a narrow rather than a
broader way. The majority of the pupils indicated that teachers' classroom questions had no effect on their learning of mathematics. The study also suggested that there was no significant difference in the way boys and girls perceived their teachers' classroom questions.The study recommended that questions must be emphasised in the mathematics classroom and that questioning strategies should be intensively given during teacher preparation.

2. Mathematic outstanding teachers used technique considering in each stage of teaching and learning activities, Introduction stage, the main teaching techniques of the outstanding teachers were verbal and nonverbal communication. The teaching stage, the main teaching techniques of outstanding teachers were explanation, verbal and nonverbal communication, using of instructional medias,

motivation,reinforcement, question, group process, drill and practice, thinking development and virtue and amusement creation techniques. In addition, for the conclusion stage, the main teaching techniques of the outstanding teachers were question, thinking development, conclusion, verbal and nonverbal communication and verbal and nonverbal communication. Salwa Mrayyan(2016). Teaching Methods for Developments of Mathematic Thinking of Math, and Methods of Teaching Mathematics College Students. The researcher tested a group of(40) students of Mathematics Department students' and, method of teaching mathematics students in college of education, intended to find out inferential thinking growth rate, the overall average math major (52.40) and (48.51) for method of teaching math. Note that the test was taken in pre-calculus, calculus1, and calculus 2 level, there were no statistically significant differences at the level of significance (0.05),between all levels and fields, this means that there is no growth in mathematical thinking during different levels nor in major, mathematical thinking needs to exercising and training, thinking skills which needs prior training or guidance to these skills through certain methods of teaching, since students vary in their abilities, and some of them even cannot think logically.

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