APPLICATION OF *TREATMENT TRAIT INTERACTION* TO IMPROVE LEARNING OF CHEMISTRY

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Abstract. This research leave from the fact that performance study of Majors student of Tadris Natural Sciences Concentration Physics (IPA-FISIKA) State Islamic University Imam Bonjol. The aims of this research were: (1) Searching ability correlation between content of capability in Chemistry and religiosity. (2) Differentiating study performance by using model of *Trait Treatment Interaction* (TTI) between class with capable student group early is high (learner fastern) and class with student group ably early lowering (slower learner) by using method study of autodidact (learning self) and learn habit (teaching regular) added with tutorial. This research use method of *quasy experiment*. Technique data collecting through test and observation, Total of population counted 101 people. But, only 66 students as a sample. The research conclude : (1) The self-learning was suitable to teach for students with high capability of knowledge (faster lesrner). (2) The regular teaching + tutorial was suitable to teach for students with lower capability of knowledge (slower learner). (3) There were correlation between religiosity and capability of content (chemistry of knowledge). (4) Trait treatment interaction can be improve the capability of academic performance of students Chemistry Science.

Keywords: Teaching Models, Trait Treatment Interaction, Chemistry, Students.

INTRODUCTION

Undang-Undang Sisdiknas No. 20 Tahun 2003 had been mention that, "… System education of national have to can guarantee generalization of opportunity of education, make-up of quality and also education management efficiency and relevansi to challenge as according to demand change of local life, national, and global so that require to be done by renewal of education by terencana is, directional, and continual". Pursuant to clarification above earning ism that, government look into important to increase the quality of human resource and education Some effort which is gone through by government to increase the quality of education in this second millennium, one of them is with change of higher education curriculum in Indonesia. This matter is proved to pass change of national curriculum in the year 1994. Curriculum of KBI this is distinguished. for example majoring domination of Science and Technology, do not focus to formulate its ability, consortium specify eye of kuliah is obliged to S-1 counted 100-110 Set Of Credit Semester Then year curriculum 1994 changed to become curriculum of[is core of and is institutional. As for characteristic of Curriculum is core of and Institutional was to: majoring attainment of interest, do not be specified by science definition which need to be studied, study program forum of a kind specify especial interest (60%), supporter interest and is other (40%), existence of educational skills subject, educational skills expertesies subject, educational skills developmental.. Here inafter curriculum of[is core of and this institutional more knowledgeable with Curriculum Base On Interest (KBK). Next in the year 2014 Curriculum Base on Interest turned into Curriculum Higher Education (KPT). This Clarification give picture that governmental role and also in effort improve the quality of education have been laboured by as good as possible, as form of social responsibility of government to translate Constitution commendation 1945 namely educate life of nation.

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Hereinafter in context higher education of System Credit Semester exist is each individual (educative participant) to be able to develop its potency maximally. So that educative participant which pertained capable quickly (learner fastern) in the field of academic can finish its study more or less three half year. Whereas educative participant which have ability of academic which mean of moderate will finish their study during more or less four-five years.

Hereinafter to educative participant group which have tardy ability (lerner slower) will finish its study more than five year.

Problems impact is such as those which elaborated above, can be seen by at storey;level education of base and till higher education shall be as follows : (1) Pursuant to report of United Nationation Development Program year 2014 peringkat of HDI (Human Development Index) Indonesia [among/between] year 2010-2012 HDI Indonesia occupy peringkat 6 from 11 state of Asean. Other Report by Asian QS University Rankings for (2015) discovering in range of year 2014 - 2015 Indonesia only deputized by University Indonesia as one of the 100 best university [in] Asia. Where in the year 2014 University Indonesia occupy peringkat 71 from 100 best university in Asia. While next in the year (2015) University Indonesia occupy peringkat 79 from 100 best university in Asia. This show Indonesia achievement in arena emulation of education world still lower.

Data above indicating Indonesia still have the quality of low education where education in Indonesia is experiencing of big problem. Problem of faced to cover; (1) quality of education which still lower, (2) study system in universitys which not yet is adequate, and (3) moral crisis which knock over our society. Decline of quality education of national is not located to ability of intelegensi all educative by participant of Indonesia, but because of opportunity which do] not flatten in obtaining good education at this nation children. Besides, quality of construction all educator, available opportunity in university environment and society, and also optimal costs which required in education which with quality not yet flattened can enjoy by nation children. Subject metter of Chemistry base on pursuant to majors syllabus of General Science – Physic (Tadris IPA-FISIKA) Faculty of Education (FT) State Islamic University Imam Bonjol Padang (UIN Imam Bonjol Padang). The aim of Chemistry subject is: student can comprehend and apply erudite method, items concept and of energy, stoikiometri, chemical energy, atomic structure, periodic system, chemical bond and also can integrate sentences of Al-Qur'An with concept- chemical concept. Then the target of lecturing of Elementary Chemistry was not yet been reached because pursuant to list assess student academic for the subject metter Chemical base on still many student obtaining mark less than 70 (with category of C). This Matter can be seen by summary assess two the last year at Tables 1.1.

Tabel 1 :Recapitulation Score of 1st Elementary Chemist on General Science - Physic

Semester & Academic Years	Average Score of Students in Gneral Science–Physic										Sum Students
	A	%	B	%	C	%	D	%	E	%	
Semester Anomalous 2013/2014	6	18,2	11	33	12	36	4	12	–	0	33
Semester Anomalous 2013/2014	4	11,1	13	36	15	42	3	8,3	1	2,8	36
Semester Anomalous 2014/2015	6	18,2	11	33	12	36	4	12	–	0	33
Semester Anomalous 2014/2015	4	11,1	13	36	15	42	3	8,3	1	2,8	36

Source: Prima Aswirna (2016:8)

Condition of above happened because process study of chemistry run by educator not to mention paying attention individual difference which owned by educative participant truthfully have interest differ between one with is other. Where there is educative participant which pertained to have high interest in study of chemistry. While on the other hand there is also educative participant which have ability or potency pertained or mean. Otherwise on the other side also there is educative participant which have potency or tardy ability (slower learner). This situation will have an effect on big to knowledge absorpsion had by each educative participant. To educative participant group which have kemampaun quickly (faster learner) hence, they will be able to permeate study items easily. Later;Then they motivated to follow study process swiftly. While educative participant ably they is can follow study of habit (Regular Teaching), its meaning is they can follow study process do not swiftly but, them still can live with in absorbent ability of given by educator. And for the group of tardy capable educative participant (slower lerner) they quickly tire of, because difficult accept items teach better. Educative participant in this group require to obtain;get study addition or remedial (Tutorial) to be able to equip lacking of knowledge absorpsion which they experience of. This matter in line with conducted by research of Kowolik (2009) "show the existence of interaction among cognate ability of educative participant with difference of treatment treatment in course of study". To link problem above hence, researcher consider necessary to use teaching model of *Trait Treatment Interaction* (TTI), where model this study make account of individual difference which owned by educative participant. So that educative participant will give to treat as educative participant group which have kemampaun quickly (learner faster) hence, they will be able to permeate study items easily.

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METHODS

Research design was compiled research structure and plan in such a manner so that researcher obtain; get answer or questions of its research. Research Desain good for providing valid answer, reliable, object and precisely to questions of research and control or control other variant, according to fomentation of Kerlinger (2006). The research used quasy experimental design with quantitative methods. Population in the research 103 students. But, only 66 students joint as a sample of the research. The technique of sampling was used simple random sampling. Because, we had a frame work of reference. Pursuant to the description will be studied: model study of *Trait Treatment Interaction* in study of 1st Elementary Study of chemistry. The data collected with questionaire and using handout. The data analysed with statistical approach with using *Statistical Analysis of Science*.

RESULT AND DISCUSSION

Result of this research discover that: (1) Existence of ability correlation early between ability early interconnected of educative participant chemistry konten with kemampauan early related to aspect of religiusitas educative participant. As for correlation which positive correlation with high hand in glove storey; level between ability early related to educative participant chemistry konten and kemampauan early related to aspect of religiusitas educative participant. (2) With in controlling ability early, performance study of educative participant chemistry which have ability quickly (learner faster) using Self-Supporting Study (Self Learning) compared to higher of Study Of Habit (Regular Teaching) with study addition (Tutorial), effect of effect treatment of study variation of use teaching model of *Trait Treatment Interaction* (TTI). With controlling ability early, performance study of educative participant chemistry which have tardy ability (learner slower) using Study Of Habit (Regular Teaching) with study addition (compared to Higher Tutorial) of Self-Supporting Study (Self Learning), effect of effect treatment of study variation.

The analysis result of hipotetical research: (1) There are difference of performance study of educative participant which [is] signifikan [among/between] self-supporting study (Self Learning) with study of habit (Regular Teaching) with study addition (Tutorial) at Class A. Analyse to yield t = 0,677 db = 64 and sig (2 tailed) or p-value = 0,028 / 2 = 0,014 < 0,05 or H_0 rejected. Thereby raised hypothesis to be tested by data. So that concluded that its meaning of educative by participant of high study performance relative, if using self-supporting study (Self Learning) at capable educative participant group quickly method berbading study of habit (Regular Teaching) with study addition (Tutorial). (2) There are difference of performance result of study of educative participant which is signifikan between self-supporting study (Self Learning) with study of habit (Regular Teaching) with study addition (Tutorial) at Class C. Analyse to yield t = 0,732 db = 64 and sig (2 tailed) or p-value = 0,042 / 2 = 0,021 < 0,05 or H0 refused. Thereby raised hypothesis to be tested by data.

Study conducted Shuell (1986) about "Individually Differences: Changing Conceptions Research Practice and in" discovering that difference of that individual relate to intelegensi and various owned growth duty it. Its meaning of individual difference constituted by the existence of difference of ability had by each educative participant and growth duty which need to be run as according to its age step; child age and adolescent age. Then research conducted by Davis III et al. (1983) about " The Effectiveness Three Methods Teaching Social Studies Concepts Fourth-Grade Students to of of: An Aptitude-Treatment Interaction Study" discovering influence inexistence which is significant in applying of model study of Aptitude Treatment Interaction by using three method learn social science to performance learn educative participant. Method learn this is: (1) critical method concept (esensial). (2) Method giftof example of and do not use example of. (3) Method of practicing through presentation. Later; then the existence of interaction between treatment (applying of method learn) with gender. Its meaning third method learn to have an effect on to gender had by educative participant.

Result of research above giving picture to us that model study of ATI (Aptitude Treatment Interaction) can be combined with study method applied by old fellow at home to be able to improve result of performance study of

educative participant. Result of study above indicating that model study of Trait Treatment Interaction can be used to study personality characteristic had by individual.

CONCLUSION

The research conclude : (1) The self-learning was suitable to teach for students with high capability of knowledge (faster lesrner). (2) The regular teaching + tutorial was suitable to teach for students with lower capability of knowledge (slower learner). (3) There were correlation between religiosity and capability of content (chemistry of knowledge). (4) *Trait Treatment Interaction* can be improve the capability of academic performance of students Chemistry Science.

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