

RESEARCH-BASED COURSE DESIGN AS THE IMPLEMENTATION OF QUALITY MANAGEMENT EVALUATION FUNCTION

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RESEARCH-BASED COURSE DESIGN AS THE IMPLEMENTATION OF QUALITY MANAGEMENT EVALUATION FUNCTION

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ABSTRACT

The purpose of this study was to produce Basics of Mathematics Learning Process as a reinforcement of personality and social competence from Mathematics future teachers. The benefits of this study were as well as the implementation of the quality management function on the learning evaluation function or reflection and the follow-ups. The course design development was accomplished with the following stages. (1) The study of Mathematics Education Study Program Curriculum, study of literature, (2) data achievement, (3) data analysis (4) discussion (5) course design arrangement, and (6) conclusion. The result obtained from data analysis was there were indicators of personality or social components which did not provide yet an optimal assessment of evaluation acquisition. There was consistency between student and output (alumni). Syllabus as a course design of Basics of Mathematics Learning Process was arranged by applying modeling approach (attention phase - retention-reproduction-feedback), and for at each phase, it had been selected the technique of individual and group assignment which demanded students activities as future teacher as adaptation or personality and social competence reinforcement.

Key word: quality management evaluation function, course design, personality and social competence.

INTRODUCTION

The challenge of future teachers, which brings consequences of education quality management implementation, has to get an attention. The enhancement of School Mathematics Curriculum has also become one of the references of the enhancement of Mathematics Education Study Program Curriculum in Educators and Educational Personnel Foundation (LPTK). The new curriculum in school is 2013 Curriculum, whereas Curriculum in Mathematics Education Study Program, Faculty of Mathematics and Natural Sciences, State University of Semarang as one of Educators and Educational Personnel Foundations (LPTK) is 2012 Curriculum. The main competencies of the graduate competence are ; (1) capable of mastering Mathematics and applying it intelligently and democratically in the mathematics education context ; (2) capable of organizing Mathematics learning in professional in an honest and intelligent way by applying innovative learning models, utilizing the latest technologies that are environmentally friendly, and being student centered in a democratic atmosphere; (3) capable of holding Mathematics workshop using innovative approaches, utilizing up to date technology which is environmentally friendly and upholding the principles of tolerance and responsibility ; (4) capable of providing guidance in Mathematics learning in an intelligent, religious, tolerant and responsible way (Mathematics Education courses, 2012). Moreover, with global life challenges, teacher are demanded to constantly perform various improvements and adjustments to the competencies mastery (Sudrajat, 2007).

Basics of Mathematics Learning Process course is one of the subjects with the study of creative and innovative mathematics learning, as well the technology and environment based learning practice in manifesting the graduate competencies. The course is intended to provide to the students the teacher candidate of Mathematics subject lesson, in order to be a teacher that has a pedagogic, personality, social, and professional competences (Government Regulation No. 7 of 2005). This course is a means of exercise for students doing classroom management. The reinforcement of the four competencies has actually been supported by the implementation of other courses, but the fact remains that the personality and social competence have not been achieved optimally. The reinforcement of both competencies is not only performed on certain subjects, but it may be accomplished on any existing course based on Curriculum. Social and personality competence that can be reinforced with character education has been designed in every course, but how this evaluation has not been detected. This is shown by the

lack of the assessment tool and the evaluation results that could be reported. The main issue is how the learning draft of Basics of Mathematics Learning Process was able to facilitate teacher to be students to strengthen social and personality competence? The purpose of this study was to produce Basics of Mathematics Learning Process as a reinforcement of personality and social competence from Mathematics Teachers to be. The benefits of this study are as well as the implementation of the quality management function on the learning evaluation function or reflection and the follow-ups.

METHODS AND PROCEDURES

The course design development was accomplished with the following stages. (1) The study of Mathematics Education Study Program Curriculum, study of literature, (2) data achievement, (3) data analysis (4) discussion (5) course design arrangement, and (6) conclusion. The curriculum studied was 2012 Curriculum. The data source was Mathematics Education Study Program alumni graduated year 2012 and the students that had taken Basics of Mathematics Learning Process 1 course. Alumni data was in the form of personality test results (Center for the Professional Education of Teachers Semarang State University 2013). Student data was students' perception towards social and personality competence, where the instrument that was being developed is in reference to indicators of competence contained in Teachers and Lecturers Act (Hidayah, 2011). Both the data were analyzed in the form of percentage for each competency to describe competence mastery for each aspect or indicator as a whole as well as each respondent. Course design that was developed was syllabus format according ISO standards that exists in Semarang State University.

RESULTS

Mathematics Education Study Program vision is: a winning, meaningful, and dignified study program. While the goal are to produce graduates that: (1) have the characteristic and professional minimal having pedagogic, social, personality competence, and master Mathematics field of study, behave and act as an dignified scientist based on Pancasila and have an insightful knowledge; (2) able to develop Technology and Science and conform himself to the progress of times; (3) have high integrity in Mathematics education field, which is supported by English proficiency and mastery of information and communication technology (ICT); (4) are able to carry out research in the field of Mathematics education that is oriented on the development of science and technology based on the principles of conservation. (Agoestanto, 2012). Basics of Learning Mathematics Process 1 (odd semester) type of theoretical lectures and Basics of Learning Mathematics Process 2 (even semester) with the kind of practical and theoretical lectures.

Average earnings of personality data analysis result from 33 alumni of each aspect were as follows, intelligence aspect 77.32; The urge to achieve 67.10; the urge to work regularly 61.91; the urge to work together with others 74.88; The urge to help 62.53; The urge to work diligently 64.85; the urge to finish the assignment 61.30; and emotional maturity 60.20. Score acquisition category was 40-49 (low), 50-59 (rather low), 60-72 (medium), 70-79 (high enough), 80-89 (high), and 90-100 (very high) (Hidayah, 2014). From data achievement, it was stated that there were no alumni with very low or very high acquisition criteria. The distribution of many alumni in each personality aspect and criteria can be seen in table 1.

Table 1. The distribution of Many Mathematics Education Study Program Alumni PPG Candidates Semarang State University 2013 in every aspect of personality and criteria

No	Aspect	Number of Alumni with Score Acquisition						
		< 39	40-49	50-59	60-69	70-79	80-89	90-100
1	Intelligence			1	3	14	15	
2	The urge to achieve		2	2	16	11	2	
3	The urge to work regularly		2	8	21	1	1	
4	The urge to work together with others			1	6	17	9	
5	The urge to help		3	9	12	8	1	
6	The urge to work diligently			12	11	8	2	
7	The urge to finish the assignment			6	26	1		
8	Emotional maturity			8	25			
	Percentage							

Paying attention to personality test results above, it can be said that the results have not been optimal. This became a concern for the preparation of future teacher students at LPTK, in particular Mathematics Education Study Program. These data is a reflection for quality improvement of organizing courses that directly related to the competence of future teachers. One of them is Basics of Mathematics Learning Process course. This test was

one of the determining factors for selection candidates of trainee teacher profession education (PPG), which was preceded by the devotion program in remote regions of Indonesia. This Education Program is one of the programs of the Directorate of Education and Educational Personnel (Diktekdik) in order to increase education quality in Indonesia, as well as the equity program of education quality. Devotion here means teaching in schools, which require appropriate fields of study. In duty place for one year, they are obliged to carry out the task of being a teacher at the school that needs and interact with the community in which they live. The purpose of PPG Program is to produce future teachers who have competence in planning, executing, and assessing learning process; following up on assessment result, coaching, and training learners as well as conducting research, and are able to develop professionalism in a sustainable way (Rustad, 2013). This finding is reinforced by data results about perceptions of social and personality competence of the students who have taken course of Basics of Mathematics Learning Process. The results were summarized in the table 2.

Table 2. Future Mathematics Teacher Student Perceptions towards supporting factor of Teacher Personality and Social Competence Mastery

No.	Assessed Component	Average	Criteria
Personality Competence Indicator			
1	Acting in accordance with the norms of law, social, religious, and national culture	2.75	Good
2	Showing honored and mature personality	2.63	Good
3	Work ethic, high responsibility, pride on becoming a teacher	2.46	Average
Social Competence Indicator			
4	Acting inclusively, act objectively and not discriminatively	2.73	Good
5	Communicating with fellow students, lecturers, educational personnel, parents, and community	2.32	Average

Source : Hidayah, 2014

Paying attention to the results of student self-assessment against personality and social competences above, there was the personality or social component indicator, which still did not provide an optimal assessment. There was consistency between student assessments with output (alumni), connecting between the competence of students and graduates of teacher education is very important. There are three phase of teacher preparation and development, such as, Pre – Service Preparation phase, License phase, and Continuing Professional Development (Wise, 2001). Referring to the formulation of graduates competency of Mathematics Education Program Study and the existing social and personality competence condition facts, then it becomes a problem how the implementation of the study should be designed in order to be effective learning.

The result of this study is a reflection of further follow-up that is accomplished in order to improve the course quality referring to the competence of graduates. Teacher Profession Program with the participants was the output from Bachelor Degree Study Program, was carried out with two curriculums, they are Academic Curriculum which was conducted on campus and Dormitory Life Curriculum to develop the values of participants character related to personality and social competence. Nevertheless, the competence of Bachelor's degree educational graduates also included 4 competencies, namely Pedagogic, Social, Personality, and Professional Competence. Character values as reinforcement of personality and social competence were designed explicitly in course design in the form of syllabus-implementation-evaluated-followed up, there by allowing the lecturers make improvements in a sustainable way.

Design and implementation integrating character values have been applied to each of the subjects, but the assessment towards character values to measure personality and social competence was not carried out yet. This brought the follow-up consequences do not refer to reflection result on the lecture implementation. Personality and social competence reinforcement was manifested in the form of learning activities either individually or in groups. Selection of strategies or learning model also specifies the implementation of character values in learning.

Hidayah's research result (2003) suggested that to improve the ability of future teacher students in developing a learning draft and ability to do teaching practice can be done through modeling with phase: attention – retention – reproduction – motivation. Effective modeling is direct modeling from lecturers and friends, whereas VCD modeling was less helpful.

Attention Phase is the learning implementaton modelling by integrating characters values with particular strategy by lecturers and friends, later followed by questions and answers and discussion. (democratic, respecting students' opinions, have well manner in talking, dressing, and doing, providing students with a polite response, using oral and written Indonesian correctly and properly)

Retention Phase, the students are given the opportunity to develop learning plan as a closed loop and open loop that is done in small groups. Through this phase, future teacher students are required to share their

experiences to friends, invite other students to observe the preparation of teaching practice in front of the class and give input, proven by friends observations on the observation sheets that have been signed by observer. Each time practice, the observer must be different.

Reproduction Phase, i.e. student candidates conduct simulations to teach, as well as a model for other students. This phase carried out as a phase of demonstrating candidate's performance not only pedagogic and professional competence, but also personality and social competence. As well as modeling for other students.

Feedback Phase, i.e. giving feedback that made each completed performance by students, conducted by a lecturer or other students. Through this phase, the future teacher student is required to be mature in receiving input from friends or lecturers; required also for another student to give an opinion and input towards the assessment of apprentice performance that refers to a teaching practice observation instrument.

Thus, the activity of this lecture, which was expected to strengthen personality competence, was able to show a mature and honored role model, and as a work ethic and high responsibility, sense of proud to be a teacher. As for social competence capable of being inclusive, acting objectively, and not discriminatory, be able to communicate with fellow students, lecturers, educational personnel, and the community.

Alternative Implementations

Strengthening the personality competence can be designed as clearly stated in the course contract. Things that can be stated in the contract as the personality and social competence reinforcement, among others: (1) during attending the lectures, students has to keep the principles of Pancasila as ideology basis and students ethics as Indonesia citizens ; (2) Developing cooperation and maintaining togetherness in achieving accomplishments; (3) accordance with the requirement.

Course contract is delivered at the beginning of the lecture become a mutual agreement between students and lecturers. Together committed to obeying all regulations that have been mutually agreed.

Lecture accomplishment is evaluated during the lecture for 1 semester. A student who disobeys contract regulation will directly get the consequences in accordance with requirement that have been mutually agreed.

Social competence indicators were integrated in the syllabus is contained in the strategy, methods, approaches, or learning models. Approaches and learning models for Mathematics school learning with a scientific approach that facilitates students to observe, ask, do, make a sense, conclude, and communicate (Curriculum, 2013). Any model centered on students, using a scientific approach, learning with cooperative learning. Through the application of the model, students are used to do cooperation in arranging problem solving, do cooperation in solving the problem, give each other and mutual acceptance. Through this routine, students will experience the wonderful togetherness.

The assessment was carried out in the process and product. The second form of assessment to measure the four of future teacher students' performance that includes four competencies used the instrument, both observation sheet and questionnaire. The course design was formulated in the following form of Syllabus (attached).

CONCLUSION

Based on the results and discussion of the studies that have been accomplished, it can be concluded that to strengthen social and personality competence of future Mathematics teacher students can be done by implementing quality management evaluation function. Lecturers design the course referring to the reflection result towards the process course results that are undergoing, supported by a study of data and information concerning the course results. Syllabus as a course design of Basics of Mathematics Learning Process was arranged by applying modeling approach (attention phase -retention-reproduction-feedback), and at each phase, it had been selected the technique of individual and group assignment which demand future teacher students activities as adaptation or personality and social competence reinforcement.

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