

The Evaluation of Project Management for the Promotion of Science and Mathematics Talented Teachers (PSMT) Phase III: A Case Study of Rangsit University

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Abstract

The purpose of this evaluation research is to evaluate the effectiveness of the Promotion of Science and Mathematics Talented Teachers (PSMT) Project Management Phase III: A Case Study of Rangsit University in 2 levels: 1) a policy and management level and 2) an operating level, together with 3 system: 1) a management system 2) a support system and 3) a knowledge network system. The data was collected from 5 executives and staff of M.A. in science teaching at RSU, 7 department head of sciences/pre-service teachers at RSU Professional Teacher Training School, 10 school directors of the Cohort 1 graduates, and 49 PSMT students. The collection of relevant documents, interviews, and questionnaire were used to collect all data. The qualitative data were analyzed in content and the quantitative data were statistically analyzed by using frequency, percentage, mean and standardization. The results showed that 1) a policy and management level had adopted the policy of the project given by the PSMT subcommittee to Rangsit University PSMT, 2) an operating level had managed on procedure from deans to executors, 3) a management system comprised of six elements showed that the students who graduate from the PSMT project satisfy professional quality and fulfill the requirements as specified in the curriculum, 4) a support system consisted of 4 elements showed that the students' demands for monthly adjustment and the average scores of the learning support were effective systems and 5) a knowledge network system comprised of 3 elements showed that there are 13 projects which, by proper budgeting, were completely accomplished in pursuit of the target goals. Consequently, the management administration process of the project has been effectively operated according to the goals.

Keywords: *evaluation research, PSMT, Project Management*

1. Introduction

According to the cabinet resolution concerning the Ministry of Education on 3 June 2009, the Institute for the Promotion of Teaching Science and Technology (IPST) was demanded to operate the project for the Promotion of Science and Mathematics Talented Teachers (PSMT) phase III (2010-2017) and annually award 580 scholarships to the graduated students in science (B.S.) for one year in Graduate Diploma Program in Teaching Profession (Grad. Dip.). Targeting and State Workforce Policy Committee is authorized to allocate the vacant positions of the government teachers to the students in PSMT program, and after two years of teaching, these students will be entitled to a national scholarship for a master's degree (up to two years).

After the project has started for a year, the Teachers' Council revoked the teaching license for the students who complete Graduate Diploma Program in Teaching Profession and determined the issuing criteria of teaching license for the students who complete graduate program with a minimum of two-year study. According to the new

curriculum standard, the project had been revised in accordance with the criteria, requirements for acquiring a teaching license, as well as school demands. Many schools under the Office of the Basic Education Commission (OBEC), in particular, now offer enrichment science classrooms for high school students excel in both mathematics and science. There are also an increase in the numbers of World-Class Standard Schools (WCS) and English Programs (EP), which English is used as a medium of instruction. Science and mathematics teachers at these schools need to have academic skills, instructional management abilities, and professional teaching excellence. These teachers are, moreover, required to demonstrate English language proficiency in sustaining effective classroom management.

For these reasons, the cabinet has decided to adjust operating patterns and the total number of scholarships for teachers of PSMT phase III (2013-2018) project. Of the 580 scholarships provided each year, they are categorized into 400 Premium scholarships (Type 1) and 180 Super Premium scholarships (Type 2) based on criteria determined by the Office of the Higher Education Commission (OHEC) and the Teachers' Council.

Rangsit University joined the project in the academic year 2017 and has been working on it until now. After a certain period of time, the potential performance of the project needs to be evaluated. The evaluation research on the project was therefore conducted to gain more insights into prospective guidelines for improving the operation and management systems under time constraints.

2. Research Objective

To evaluate the effectiveness of Project Management for the Promotion of Science and Mathematics Talented Teachers (PSMT) Phase III: A Case Study of Rangsit University in 2 levels: 1) a policy and management level and 2) an operating level, together with 3 system: 1) a management system 2) a support system and 3) a knowledge network system.

3. Research Methodologies

3.1 Research Design

This study used mixed methods in educational research, which combine both quantitative and qualitative research methodologies.

3.2 Data Source /Target Population

The 5 executives and staff of M.A. in science teaching at RSU, the 7 department head of sciences/pre-service teachers at RSU Professional Teacher Training School, the 10 school directors of the Cohort 1 graduates, and 49 PSMT students.

3.3 Scope of the Study

1. Timing Scope : August 2016-December 2016
2. Area Scope: Faculty of Education and Faculty of Science, Rangsit University and RSU Professional Teacher Training School

3.4 Operational Specific Terms

- 1) The Management on the Promotion of Science and Mathematics Talented Teachers (PSMT) Project Management Phase III of Rangsit University was the individual process of the obligations and the implementing, and used administrative resources, strategic implementation to meet the policy and goals. The project management had 2 levels: 1) a policy and management level and 2) an operating level, together with 3 systems: 1) a management system 2) a support system and 3) a knowledge network system.

- 2) A management system consisted of 6 elements as follows: 1) selection of talents, 2) curriculum and instruction, 3) professional teacher training, 4) student development, 5) dissertation and 6) cooperative networking systems among the Faculty of Education, the Faculty of Science and the professional teacher training schools
- 3) A support system consisted of 4 elements as follows: 1) finance and budgeting 2) supplies and materials 3) Personnel management and 4) Office building
- 4) A knowledge network system consisted of 3 elements as follows: 1) strategic planning and annual plan, 2) management information systems and 3) management research and development

4. Data Collection and Data Analysis

The data of this research were collected from research instruments consisted of curriculum document, interviews and questionnaires. (Table 1)

Table 1 Data collection and instruments.

Sample group	Instruments	Data analysis
The 5 executives and staff of M.A. in science teaching at RSU	The questionnaires of evaluation of Master of Arts Program in Teaching Science	1)The qualitative data were analyzed in content 2) The quantitative data were statistically analyzed by using frequency, percentage, mean and standardization.
The 7 department head of sciences/pre-service teachers at RSU Professional Teacher Training School	1. The questionnaires of evaluation of Master of Arts Program in Teaching Science 2. Informal interviews	
The 10 school directors of the Cohort 1 graduates	The questionnaires of employers satisfaction for graduate students from Master of Arts Program in Teaching Science	
The 49 PSMT students.	The questionnaires of evaluation of Master of Arts Program in Teaching Science	

5. Results

The analysis of data collection showed that:

1. University administration

The project administration was assessed by two levels: 1) a policy and management level and 2) an operating level.

1) In a policy and management level, the IPST has adopted the policy of the project given by the PSMT subcommittee. The curriculum director acted as a representative for the dean of the Faculty of Education to attend the meeting, so the policy had been quickly implemented and put into practice. In case of the operations with the outsourcing, the agreement must be made prior to the actions to be taken. The core

management policies, moreover, were determined by the president via the vice president for academic affairs, and a request for appointment of the PSMT committee of Rangsit University was carried out by the assistant vice president. There are biannual in-person meetings in the first two years which are thereafter changed into either e-meeting system or oral presentation.

2) In an operating level, the policies were issued by the deans of the Faculty of Education and the Faculty of Science along with the deputy deans for academic affairs. The committee of M.A. in science teaching includes the assistant vice president for academic affairs as an advisor, 5 curriculum instructors, and 1 staff member. The meetings are held five times per academic year.

2. A management system is comprises of 6 elements as follows:

1) Selection of talents

The numbers of successful candidates for the scholarship are illustrated as follows: 1) 33 in academic year 2013, 2) 10 in academic year 2014, and 3) 6 in academic year 2015. This indicates a decreasing proclivity for the number of qualified students, and the major influential factor is the fact that students' English proficiency scores did not meet the standard requirements specified by the IPST. As the standard requirements for the lowest score cannot be adjusted, possible solutions and cooperation at all levels are highly crucial.

2) Curriculum and instruction

The curriculum and instruction satisfy the standards requirement. The internal quality assessment score of 3.77 in academic year 2014 was averaged value at a high level since there is no teacher placement of the graduates at the beginning and thus no score of employer's satisfaction of graduates. However, the employer's satisfaction score increased to 4.04 in academic year 2015, exhibiting remarkable improvement of internal quality assessment. This also shows that the graduates of the PSMT project satisfy professional quality and fulfil the requirements as specified in the curriculum.

3) Professional teacher training

Seven professional teacher training schools that follow the criteria set by the educational institutes were selected to sign up for the cooperation with the PSMT and Rangsit University. Certain qualifications of pre-service teachers and instructors including student guidelines are determined according to the protocol and described in the training manual. It was also found that the orientation to such training is of great help in providing students with a better understanding of learning management process and boosting their confidence in professional practices.

4) Student development

During the years of 2013-2015, Rangsit University performed several other projects to strengthen students' academic skills, professional expertise, and teacher spirituality. The projects include 5 professional development projects, 5 English skills development projects, 3 research projects, 1 teacher leadership project, and 2 arts and culture projects. The overall satisfaction scores of all projects were rated as very high by the trainees. For the evaluation of graduate users, the average scores were 4.82 for moral and ethical behaviours, 4.46 for knowledge, 4.30 for intellectual skills, 4.56 for interpersonal skills and responsibility, 4.30 for numerical analysis, communication and information technology skills, and 4.41 for 'science teacher' identity.

5) Dissertation

Dissertation or thesis advisors are lecturers or recognized experts in the related fields of research. They are obligated to supervise their students by providing guidance in the execution of research activities, following up on the progress of their studies, keeping the study plan updated as necessary, guiding them in publication writing and encouraging

them to actively publish their research findings in the publication forums of the particular field of study. All students are encouraged to undertake action research. In addition, it was found that a total number of 43 students were all able to complete their dissertations, and be able to publish their research articles in academic conferences and also be able to manage to graduate within two academic years, accordingly.

6) Cooperative networking systems among the Faculty of Education, the Faculty of Science and the professional teacher training schools

The curriculum of M.A. in science teaching was designed and developed to produce science professional teachers. As for the cooperation, the students in PSMT phase III were trained with professional training teachers. During the years of 2013-2015, they participated in 7 professional development programs including conferences, seminars and pre-service teacher trainings which were all given very satisfying feedback.

3. A support system consists of 4 elements as follows:

1) Finance and budget

Any registration fees and operating budgets are allocated to full-time teacher salaries, part-time teacher payment, and student development projects. At this juncture, certain issues have been raised. First, the state government's fiscal year period that begins on October 1 and ends on September 30 of the following year is not aligned with the university's fiscal year running from June 1 to May 31 of the following year. The budget had been supported by the IPST to the university in November and approved for use of the project over a 6-month period starting from November to May 31. The leftover budget had not been however properly managed and rolled over to the next budget period. The project had been left with a 6-month interval and thus caused a lack of flexibility in operating activities.

Although the scholarship is adequate to afford textbooks, lab fees, and costs of research assistance, the total expenses per month still exceed the stipend. Also, the monthly payment is mostly spent on renting an apartment or a dormitory off campus. Additional allowance has to be paid directly by students' parents/guardians or a part-time job. Hence, this establishes the demands for adjustment of monthly allowance to 10,000-11,000 baht/month and followed by 11,001-12,000 baht/month as proposed by students.

2) Supplies and materials

The overall average scores of satisfaction of supplies and materials rated by students and curriculum instructors were $4.59 \pm .578$ and $4.50 \pm .721$, respectively. A request for the RSU Library to purchase at least 10 books on action research or relevant publications was also been made to facilitate teaching and learning activities.

3) Personnel management

The PSMT phase III project has been chiefly operated by the curriculum director and staff. Salaries are paid out of the university budgets. Staff members are also provided with overtime pay for working hours over a regular basis which is allocated from the faculty annual budget. However, such budgets cannot be used to defray costs for outhouse meeting or third party conference attendance fees, allowance, and travel expenses. This has therefore raised the problem of staff recruitment.

4) Office building

The average scores of the office building rated 'very good' by students and curriculum instructors were 4.73 ± 0.547 and 4.60 ± 0.550 , respectively.

4. A knowledge network system comprises 3 elements as follows:

1) Strategic planning and annual plan

A five-year (2012-2016) strategic plan for master's degree in science teaching curriculum development is grounded on five guiding principles: 1) service to excellence

in education and graduate production, 2) service to excellence in research, creative works and innovation, 3) service to excellence in academic services and trainings, 4) service to guidance for preservation of arts and culture and environment, 5) service to excellence in organizational management and practice for happy workplace. Each strategic principle coupled with specific performance indicators is driven by 13 projects which, by proper budgeting, were completely accomplished in pursuit of the target goals.

2) Management information systems (MIS)

Management information system is a network resource used by Registrar's Office, Information Technology Service Center, and Intranet System to manage student data – from profiles to grading report – except employment and progress records.

3) Management research and development

The data yielded from two studies regarding management research and development were constructed and used to develop action research and improve better instructional practices.

6. Discussion

According to the evaluation research of the Promotion of Science and Mathematics Talented Teachers (PSMT) project management phase III: a case study of Rangsit University between academic years 2013-2015, Rangsit University administration process of the PSMT project has been successfully carried out according to the goals. The clear policy of the project and university readiness is consistent with Srisukvatananan et al. (2001), Sripairoj et al. (2004) and Sripairoj et al. (2007) who studied of an Evaluation of the Project for the Promotion of Science and Mathematics Talented Teachers (PSMT) between academic years 1996-1999, 2000-2003 and 2004-2006.

7. Conclusion

The evaluation research findings of the PSMT phase III project were presented in qualitative data and quantitative data. This study also sheds some lights on how future phases of the project can be developed and operated more effectively.

8. The Author

Assoc. Prof. Kanchana Chanprasert was the director of Master of Arts Program in Teaching Science and head of Department of Physics, Faculty of Science, and Rangsit University.

9. Acknowledgement

Special thanks for supporting budget research from the Institute for the Promotion of Teaching Science and Technology (IPST), and gratefully thank for hospitality from Dean of Faculty of Science and Faculty of Education.

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