

POO05581

Indicators of Research - Based Learning Instructional Process :A Case Study of Best Practice in a Primary School

Suchada Poonpan*
Siriphan Suwanmankha**

I. Abstract

The purpose of this research was to study indicators of research - based learning instructional process in the primary school which was a case study of the best practices. Using qualitative techniques, this case study research was conducted in the school that shown the best practices in research- based learning instructional process management in Bangkok. For six half months of collecting data, non-participant observation of students and school staff members, informal interviews with the key informants, focus group discussion with the teachers who were selected by the team leader of research - based learning school project. Fieldnotes, and documentary analysis were used in collecting data and data triangulation. The data were reviewed, synthesized and analyzed by analytic induction.

The results of this qualitative study were 4 main indicators of research- based learning instructional process. In the view as the educational system, the input and process indicators consist of three main indicators; research - based learning instructional management, characteristic of teachers and students' learning behavior, and the output indicator was the teachers' outcome and achievement, learning skill, and necessary characteristics of students.

For the further study, the indicators of research- based learning instructional process would be validated by five educational experts and concluded by the experts in the case school. The educators could apply for strategic planning in educational management and the best practices guideline for instructional development in primary school.

II. Background

Research was the important tool to develop the quality of the learning and teaching. The usefulness of research were reviewed and concluded for many ways. Thai educators showed that research procedure and research result could be used for learning development, achievement of students development but there were not much teachers who used research for improvement or applied the research results, the research finding for effective learning and teaching.

Suchada Poonpan is a Ph.D. Candidate; Siriphan Suwanmankha, Ph.D. is an Assistant Professor at the Department of Research and Psychology in Education, Faculty of Education, Chulalongkorn University, Thailand (advisor)

Research - based learning is a system of instruction which used an authentic learning, problem – solving, cooperative learning, hands on, and inquiry discovery approach, guided by a constructivist philosophy. Its usefulness had been recognized for many decades but “research in classroom” had not been adopted as a teaching method by many (Lockwood, 1994)

Research - based learning is an effective way to change students’ learning and practicing about how to learning by doing. Furthermore, much of the research articles revealed that students understanding of new knowledge were poor which it could be explained that students in elementary school and secondary schools could not to study, discover, inquire the new lesson or knowledge by themselves. Because of the instructional design in the past, the teachers’ rules were important in the classroom, students had learn from the teachers’ teaching and telling. For a long times the teachers centered has the teaching style in Thai classroom. The nature of learning style in classroom was passive learning which there were many educators had studied to improve the scope of knowledge, students’ achievement levels, the skill in study by using scientific method. Klingner (1999) said that students should be practiced to search the new knowledge by learning by doing or the instruction technique of instruction that we had known “research – based”.

The researchers and educators had tried to develop the research – based instruction or we could call research - based teaching or research – based learning for graduate students. The improvement of teaching for encouraging students to learn more had been tried to change. Most of educators used the learning style: learning by inquiry’ as we known that students could learn and got the new lesson by themselves. However, Suwannawela, J. and the Faculty of education, Chulalongkorn University (2001) said that we had to facilitate the teachers in using teaching style which were integrated the research and teaching.

The research - based learning form consisted of two types : the first form was the teaching that included the research result and other teaching methods. The second form of research - based learning was the method that served our students to construct the knowledge by searching, setting hypothesis, collecting data, analyzing data and making the conclusion of the new data or new lessons. We had heard that there were scientific methods which were suitable for learning by doing.

From the study the indicators in education, it was found that benefit of research - based learning; had to be studied the indicators which could identified the condition, trait and the output of the instruction at that time were completed or not, and the indicators could tell the educators that everything was done successfully and followed out the objectives of teaching. Furthermore, indicators were necessary for making the guideline of instruction management and the evaluation of teaching and students’ learning. However, this study for development the indicators of research - based learning had to used the experts who known about the theories, principles of research - based learning and the experts who had been teaching this style actually and there were effectiveness about learning development and encouraged teachers to improve their student’ achievement.

III. Objectives

This research project were aimed as follows; 1)To study the best practices in research- based learning instructional process in a primary school
2).To study the indicators of factors that related with research – based learning in a primary school 3)To study the indicators of research –based learning output in primary school 4) To study the guideline for developing other primary school to act according to a research-based learning instructional process

IV. Conceptual Framework

Research – based learning or research – based instruction was explained by Krulik and Rudnick, 1993 ; Somwang, 1998 that was teaching method by using research in learning process for study the new lesson. Research – based learning was involved with the research in two traits ; the first was using research review as the content of the lesson and the second one was development the research process as a tool in inquiry learning for the body of knowledge.

Pateep (2000) said that research – based learning was consisted four methods of teaching ; 1) teaching by suing research method, 2) teaching by participation with the teacher in research project, 3) teaching by studying the research results and research procedures which student could learn about the document synthesis because synthesis was the important skill in research procedure. The last teaching method was using research review as the content of the lesson.

The advantages of research – based learning were developing the inquiry skill of learning development, Students could be got the chance to know or learn not only the content in the lesson but also they could be practiced the learning skill, for example searching, setting hypothesis, collecting data, examining data or data analysis and conclusion. If the students had learn by using research – based teaching technique they could had the skills for inquiry the new knowledge and could learn everything and development the body of knowledge.

The theories about learning theories that were synthesized. Three theories that related about research – based learning as follow ; 1) Behaviorism : this theory presented that learning may be occurred from the reinforcement. The learners could be got the new knowledge by passed from teacher which we had known in the word ' passive learning'. 2) Cognitive Psychology : this theory believed that receiving new information, stored the data, the learners had to active in trying to understand the meaning of data of information. 3) Constructivism : the Cognitive Psychology focused on the rules of learners about constructing new knowledge so this theory was called "Constructivism" that had 4 components as follow; 3.1) learners construct their own understanding, 3.2) learning could be constructed by prior understanding, 3.3) learning which collected from social interaction, 3.4) learning by the real experience for constructing the meaningful learning. Form the Constructivism theory, the expert about teaching and learning development had applied to construct the learner – centered principles and the principle of research – based learning.

Johnstone (1981) said that the indicators was the information which identify the quantity or condition of the thing that would like to measure at that time. From the

synthesized definitions of the experts show that indicators was the information which used to identify the condition or the trait of performance in organization at that time and tell the result of performance which the officers would like to know how they get succeed.

The development of indicators was the process for constructing the information of condition at the time. Johnstone (1981) said that the step of development indicator had four issues, that were setting the method, selection overall variables, gathering the appropriate variable and setting the variable loading. In the field of education, Johnstone (1981) had described that the development or constructing education indicators were three methods as follow; the pragmatic definition of an indicator, the theoretical definition of an indicator and the empirical definition of an indicator. The setting variable loading had three methods; the first one was expert judgment, the second was measure effort required and the third one was empirical data which was the statistic method in analyzing data as the example follow ; multiple regression analysis, factor analysis, discriminate analysis or canonical correlation analysis (Wanee, 1996; Johnstone, 1981)

The quality of indicator was proof by using the two principles; the first was the proof by using theoretical framework and the second principle in checking quality of indicator was statistical method. For this study, the researcher planed to develop the indicators of research – based learning by using the experts who had the real knowledge and had a lot of experiences in following the theoretical framework which from studying the related literatures. The usefulness of education indicators were five issues as follows (Johnstone, 1981; Bottani and Walberg, 1994) 1) about setting the policy and the main objectives of education management 2) about audit, control and evaluation the educational system 3) about research for education development 4) about ordering or classifying the system of education and the last useful point of education indicator was evaluation the quality in education.

V. Methods

Introduction the indicators of research – based learning in elementary education was developed in using the experts who had the real knowledge and had a lot of experiences in following the theoretical framework which from studying the related literatures. The researcher developed the conceptual framework of the developing the indicators of research – based learning in elementary education by review related literature. Prepared the construction the model, validating and revising the model. About the step of validation, five educational experts who could tell the way, the principle and theoretical of research – based learning. Five experts had been selected from Department of Educational Research, Faculty of education, Chulalongkorn University.

This study focused on a primary school in detail and aims to obtain an understanding of the best practices in research-based learning instructional process management. In addition to documenting reviews, it will provide insights into why things happened and the circumstances prevailing at the time. Four principal methods of data collection was employed: 1) a review of written documents, 2) semi-structured interviews with key staff teachers, 3) observation the instructional process in classroom and students learning behaviors, and 4) focus group discussion with the key staff teachers who taught research-based learning.

V.I Sites and subjects

This study concentrates in detail on a primary school which is a case study of the best practice, this school was shown the best practice in research-based learning instructional process management in Bangkok. Methods of collecting information will include a review of documents, semi-structured interviews with key staff teachers and the administrator who relevant with research-based learning in primary level, observation the classrooms and focus group discussion.

The research project will also collect histories and the instructional process management of this case over a period of several weeks. The researcher contacted the school board chief to request permission to use this school as a case study. After this school give permission, the researcher prepared the details of questions and explained in more detail and asked to attend the next meeting of teachers who used research-based learning method with their students and planning in order to introduce the objectives of research and the scope of this collecting data.

V.II Data collection

Information was collected by using four principal methods: 1) a review of written documents, 2) semi-structured interviews with key staff teachers, 3) observation the instructional process in classroom and students learning behaviors, and 4) focus group discussion with the key staff teachers who taught research-based learning.

a) **review of documents** ; the researcher asked the key staff teachers for portfolio of teachers and students, baby research or the research product of students that had learned by research-based learning. The lesson plans and diaries after finish the lessons which were written by the teachers were reviewed in this study. In addition to the histories and the school year planning were reviewed and analyzed for getting the information of school, the culture of this organization, and the context for more understanding about this case.

b) **Semi-structured interviews**; the semi-structured interviews was held with the administrator and key staff teachers who taught research-based learning method. The teachers who were key informants in this study had to teach in primary level with research-based learning method, the academic assistant of head master in this school and the staffs who had key roles in this school which they was asked about their activities, plans, and the process management in research-based learning.

c) **Observation**; non-participant observation of students and school staff members was used in collecting the information of this case. The scope of data which were collected as follows; method of the research-based learning which the teachers were taught , the teachers' behaviors, the behavior of students, the teaching technique and teaching materials, the context and circumstances in the classroom.

d) **Focus group discussion**; this case study was using qualitative technique by conducting focus group discussion with the ten teachers who were selected by the team leader of research-based learning project in school. The contents that were collected were the indicators of research –based learning in primary school and the guideline to develop other school in research-based learning. Field notes, taking

photographs, and tape recording were used in this project for more information and increase validity about this case.

The qualitative data were reviewed, synthesized and analyzed by analytic induction.

VI.Results

The results of this qualitative study were 4 main indicators of research- based learning instructional process. In the view as the educational system, the input and process indicators consist of three main indicators; research – based learning instructional management, characteristic of teachers and students' learning behavior, and the output indicator was the teachers' outcome and achievement, learning skill, and necessary characteristics of students.

VII.Conclusion

For the further study, the indicators of research- based learning instructional process would be validated by five educational experts and concluded by the experts in the case school. The educators could apply for strategic planning in educational management and the best practices guideline for instructional development in primary school.

References

- Bigge, M.L. (1981). *Learning theories for teachers*(4th ed.). New York: Harper&Row Publishers.
- Bogan, R. C., and Biklen, (1992). *Qualitative Research for Education*. 2nd ed. Boston: Allyn and Bacon.
- Bruner, J. (1963). *The process of education*. New York: Alfred A. Knopf, Inc. and Random House, Inc.
- Clark, B.R. (1997). The modern integration of research activities with teaching and learning. *The Journal of Higher Education*. 68: 241 -255.
- Dewey, J. (1963). *Experience and education*. New York: Macmillan Publishing Company.
- Fuchs, L.S. (2001). Principles for sustaining research-based practice in the schools: a case study. *Focus on Exceptional Children*. 33(4): 1 – 14.
- Gagne, R.M.& Briggs, L. (1974). *Principles of instructional design*. New York: Holt, Rinehart&Winston.
- Honig, B. (1997). Research-based reading instruction:the right way. *The Education Digest*. 63: 15 – 22.
- Johnstone, J. N. (1981). *Indicators of education system*. London: Unesco.
- Johnstone, J. N. Educational Indicators. In J. P. Keeves (ed.), (1988). *Educational research, Methodology and measurement an international handbook*. pp.451-456.NY: PERGAMON.
- Joyce, B.& Weil, M. (1996). *Models of teaching*. London: Allyn and Bacon.
- Kauchak, D. P. & Eggen, P. D. (1998). *Learning and teaching : research-based methods*. London: Allyn and Bacon.

- Klingner, J.K.& others. (2001). Examining the schoolwide”spread” of research-based practices. *Learning Disability Quarterly* 24(4): 221-34. Retrieved August 7, 2003, from <http://www.wcer.wisc.edu/nisc/cl1/CL/MI3J.htm>.
- Maxwell, J. A. (1996). *Qualitative Research Design: An Interactive Approach*. California: SAGE Publication.
- Mitchell, J. C. (2000). Case and situation analysis. In R. Gomm(ed.), *Case study method*, pp.165-186. London: SAGE.
- Phithianuwat, S. and Bunterm, T. (1998). Research-Based Learning. *The Journal of Research Methodology*. Bangkok: Department of Educational Research, Faculty of Education, Chulalongkorn University. (In Thai).
- Shanahan, T. (2003). Research-based reading instruction: Myths about the national reading panel report. *The Reading Teacher* . 56(7). Retrieved August 7, 2003, from <http://www.reading.org/>.
- Sinlarat, P. (2002). Research-Based Teaching in undergraduate student. in Sinlarat, P. (ed.), (2002). *Research-Based Instruction (collected articles)*. Bangkok: Faculty of Education, Chulalongkorn University. (In Thai).
- Tashakkori, A. and Teddlie, C. (1998). *Mixed methodology: combining qualitative and quantitative approach*. CA: SAGE.
- Woodward, J. (1993). The technology of technology-based instruction: Comments on the research, development, and dissemination approach to innovation. *Education and Treatment of Children*.16: 345-360.
- Yin, R. K. (1994). *Case study research*. Vol.5: Applied Social Research Methods Series. 2nd ed. London:SAGE.

Suchada Poonpan,MS.
 Ph.D. Candidate, Faculty of Education, Chulalongkorn University
 Phaya Thai ,Bangkok Thailand 10330
 Address of work: Kamphaeng Phet Cultural Office
 Muang District Kamphaeng Phet Province 62000
 Mobile phone:09-9595-369
Poon2517@yahoo.com

Suchada Poonpan is Ph.D. Candidate student in the Educational Research methodology , Department of Educational Psychology and Research , Faculty of Education, Chulalongkorn University ,Bangkok Thailand. She is the cultural academic officer at Kamphaeng Phet Cultural Office Muang District Kamphaeng Phet Province, Thailand. Her current research interests include cultural issues in teaching and learning as child centred, research-based learning process management, development the learning /teaching method for achievement of learning development which could be adapt for many subjects.

Poon2517@yahoo.com

