Full Length Research Paper

Teachers' development model to authentic assessment by empowerment evaluation approach

Charin Charoenchai[1]*, Songsak Phuseeorn[1] and Waro Phengsawat[2]

[1]Department of Education Research and Development, Faculty of Education, Mahasarakham University, Thailand.
[2]Department of Education Administration, Faculty of Education, Rajabhat Sakhonnakhon University Thailand, 47000.

The purposes of this study were 1) Study teachers authentic assessment, teachers comprehension of authentic assessment and teachers needs for authentic assessment development. 2) To create teachers development model. 3) Experiment of teachers development model. 4) Evaluate effectiveness of teachers development model. The research is divided into 4 periods. The first period comprises 900 sample primary school teachers in Sakhonnakhon province. The second comprises were 15 evaluation experts. The third comprises 32 sample teachers in small, medium and large primary schools. The fourth period comprises the same 32 sample teachers to gather survey data, meeting seminars to arrive at conclusion from survey, literature analysis and observations. Statistical analysis is performed to find percentage, means, median, inter-quartile range, standard deviation, dependent sample t-test, while qualitative data is subjected to content analysis. The results revealed that 1) 900 primary school teachers in Sakhonnakhon Province undertaking and comprehension of authentic assessment were at the medium level while the expectation was higher than reality at .01 significant level. 2) The model which revealed 4 relationships: prior development study, teachers development planning, teachers development implementation and teachers development evaluation. 3) Experiment of teachers development model to authentic assessment revealed that understanding, attitude and capability to carry out authentic assessment were all higher than before at .01 significant level. 4) Evaluation of effectiveness of teachers development model to authentic assessment by empowerment evaluation approach found the model have utility, feasibility, accuracy, propriety and high teachers' satisfaction.

Key words: Teachers development, authentic assessment, empowerment evaluation, model.

INTRODUCTION

Education evaluation has gone through extensive development and experiments for quite a long time and is now adopted and used widely. Initially, evaluation was done through standardized tests, but these tests could not provide all the answers, necessitating the rise of new approaches (Kanchanawasi, 2009). Authentic assessment is an alternative approach which stresses natural learning and can genuinely develop learners (Department of Curriculum and Instruction Development, 1999). Even though authentic assessment began in Thailand in 1993,

some teachers still had reservations and wanted clarification (Chalasthian, 2007). Various studies revealed that teachers lacked understanding and skills in implementing authentic assessment, posing an interesting question on how to devise an approach that can develop teachers to be capable of carrying out authentic assessment so as to continually develop learners in a sustainable manner.

Empowerment evaluation approach was proposed by Fetterman (1993), based on community psychology, sociology and practical research. This innovative approach has been widely implemented in a variety of contexts. It is different from the traditional standardized tests in that it is a continuous process, undergoing continual adjustment and life-long learning, helping learners acquire learning techniques, feeling being stakeholder and realizing the value and necessity of evaluation, leading to sustainable and lifelong implementation (Wonggom, 2004).

Empowerment evaluation approach has an outstanding feature of being flexible and suitable for any context. The approach helps staff in an organization carry out self-evaluation, can be applied in many situations. If it is widely adopted in education context in Thailand, the researchers believe that it would genuinely help teachers implement authentic assessment. The researchers are interested in using empowerment evaluation approach to develop teachers' authentic assessment to stimulate teachers to want to develop themselves and carry out authentic assessment.

Objective

The four research objectives were 1) Study teachers' authentic assessment, comprehension of authentic assessment and needs for authentic assessment development. 2) To create teachers development model through authentic assessment by empowerment evaluation approach. 3) Experiment of teachers development model to authentic assessment by empowerment evaluation approach. 4) Evaluate effectiveness of teachers development model to authentic assessment by empowerment evaluation approach.

METHODOLOGY

The study was divided into 4 periods:

The first period comprised survey of authentic assessment studies to form a database for teachers development model. Samples comprised 900 primary school teachers in Sakhonnakhon province. Study variables were authentic assessment conditions, comprehension of authentic assessment and the needs for authentic assessment development.

The second period was the teachers Development Model through Authentic Assessment by Empowerment Evaluation Approach. The researcher was synthesized base on the concept teacher development, the concept empowerment evaluation. And synthesize information obtained from the study of the conditions and problems with authentic assessment in schools. Analysis Study P. R. I. The National Education Policy Act involved. Retrieved from the Internet, including databases and documents related research. Used to determine the structure of the model developed to evaluate teachers based on actual conditions. Based on the concept of developing teacher form Teeravut Pratoomnoparath (Thayotyingyong, 2007).

In the design of structures relationship 4 parts. The subjects were 15 evaluation experts, comprising education administrators, teachers' development experts, and classroom learning and evaluation experts. Education variable under study was the suitability of teachers' development model through authentic assessment by empowerment evaluation approach. Research devices comprised assessment form of the suitability and feasibility of the model and meeting records. Data were obtained using Multi-Attribute Consensus Reaching (MACR) technique. Descriptive statistical analysis was performed to find median, inter-quartile range. Conclusion was drawn from content analysis, while suitability and feasibility of the model were done by MACR

The third period was the experiment of teachers development model. Samples comprised 32 teachers in small (A), medium (B) and large (C) primary schools. Study variables were knowledge, attitude and capability in carrying out authentic assessment. Teachers were assessed pre-and post-experiment of teachers development model. Statistical analysis was performed to find percentage, means, median, inter-quartile range, standard deviation, pre-and post-experiment model dependent sample t-test.

The fourth period was evaluation of teachers' development model. Samples comprised the same 32 teachers in the second period. Study variables were evaluation standards of utility, feasibility, accuracy, propriety (The Joint Committee on Standards for Educational Evaluation. 1994; Cited in Stufflebeam and Shinkfield) and teachers' satisfaction of the model. Research tool was opinion survey of model characteristics and satisfaction. Descriptive statistical analysis was performed to find means and standard deviation to be compared with the criteria for meaningful interpretation (Sisa-at, 2011).

RESULTS

The results research on teachers development model to authentic assessment by empowerment evaluation approach raised several issues as follows:

The first period comprises 900 sample primary school teachers in Sakhonnakhon province. They gather survey and test data. Statistical analysis is performed to find percentage, means, standard deviation and Comparison Mean difference for the need for authentic assessment development between Expectation and Reality by dependent sample t-test the review of authentic assessment revealed (Tables 1 and 2).

Tables 1 and 2 showed that 900 sample teachers under the condition of authentic assessment undertaking authentic assessment were at the medium level (Mean = 3.09, S.D. = 0.35). Dependent sample t-test found average expectation value (mean = 4.70, S.D. = 0.34) was higher than reality (mean = 2.58, S.D.= 0.33) at .01 significant level. The teachers' comprehension of

Table 1. Mean and standard deviation of authentic assessment conditions, mean difference of the need for authentic assessment development.

Authentic assessment aspects	Authentic assessment condition		Mean difference for the need for authentic assessment development				
			Expectation		Reality		t
	Mean	S.D.	Mean	S.D.	Mean	S.D.	
Assessment objectives	3.76	0.30	4.62	0.48	2.80	0.40	87.84**
Work scope	2.62	0.35	4.81	0.45	2.66	0.47	89.89**
Evaluator	3.54	0.34	4.64	0.48	2.73	0.44	77.26**
Method and tool	2.91	0.31	4.68	0.46	2.62	0.50	82.80**
Time and place	3.44	0.37	4.63	0.48	2.64	0.50	76.40**
Criteria	2.50	0.34	4.87	0.39	2.38	0.48	100.54**
Result presentation	2.84	0.31	4.80	0.33	2.27	0.44	117.52**
Total	**3.09**	**0.35**	**4.70**	**0.34**	**2.58**	**0.33**	**123.66****

Note : 1) Scores of authentic assessment and difference between expectation and reality are measured by 5 levels1.00-1.50= very low, 1.51-2.50 = low, 2.51-3.50= medium, 3.51-4.50 = high, 4.51-5.00 = very high.
2) ** Significant at .01level.

Table 2 Quantity, Percent, mean standard deviation of differentiated by low, medium, high authentic assessment comprehension.

Authentic assessment Comprehension	Quantity / Percent			
	Quantity	Percent	Mean	S.D.
Low	156	17.33	8.01	2.10
Medium	430	47.78	14.06	2.56
High	314	34.89	23.50	2.47
Total	**900**	**100**	**15.19**	**2.38**

Note : Scores of authentic assessment comprehension derived from 30-items tests: 0-10 low, 11-20 medium, 21-30 high.

authentic assessment was at the medium level, 47.78 %. The study of authentic assessment implementation yielded the following:

Authentic assessment implementation was at medium level . Empirical evidence during teachers development found teachers could not determine assessment method in line with what to be assessed, which may be due to teachers' lack of comprehension, high workloads of teaching and non-teaching activities.

Needs assessment study found teachers wanted to develop authentic assessment capability (Office of National Education Council, 1999; Yothasing, 2003). However, after training on authentic assessment, most teachers failed to implement the method, which may be due to the fact that teachers' training was not comprehensive enough and training duration was inadequate.

Authentic assessment comprehension was at medium level, 47.78 % (Sakulsong, 2001; Phuviphadavat, 2001), which may be due to teachers' lack of comprehension and the authentic assessment needs planning and

several steps for implementation.

The second period was to create teachers development model through authentic assessment by empowerment evaluation approach, the researchers applied teachers development through authentic assessment to come up with 4 related components: (1) Prior development study (2) Teachers development planning (3) Teachers development implementation and (4) Teachers development evaluation.

On empowerment evaluation, there were 3 related components (1) Mission (2) Taking stock and (3) Planning for the future. The under study was the suitability of teachers development model through authentic assessment by empowerment evaluation approach. Research devices comprised assessment form of the suitability and feasibility of the model and meeting records. Data were obtained using Multi-Attribute Consensus Reaching (MACR) technique (Figure 1).

The teachers' development model comprises of 4 steps of development.

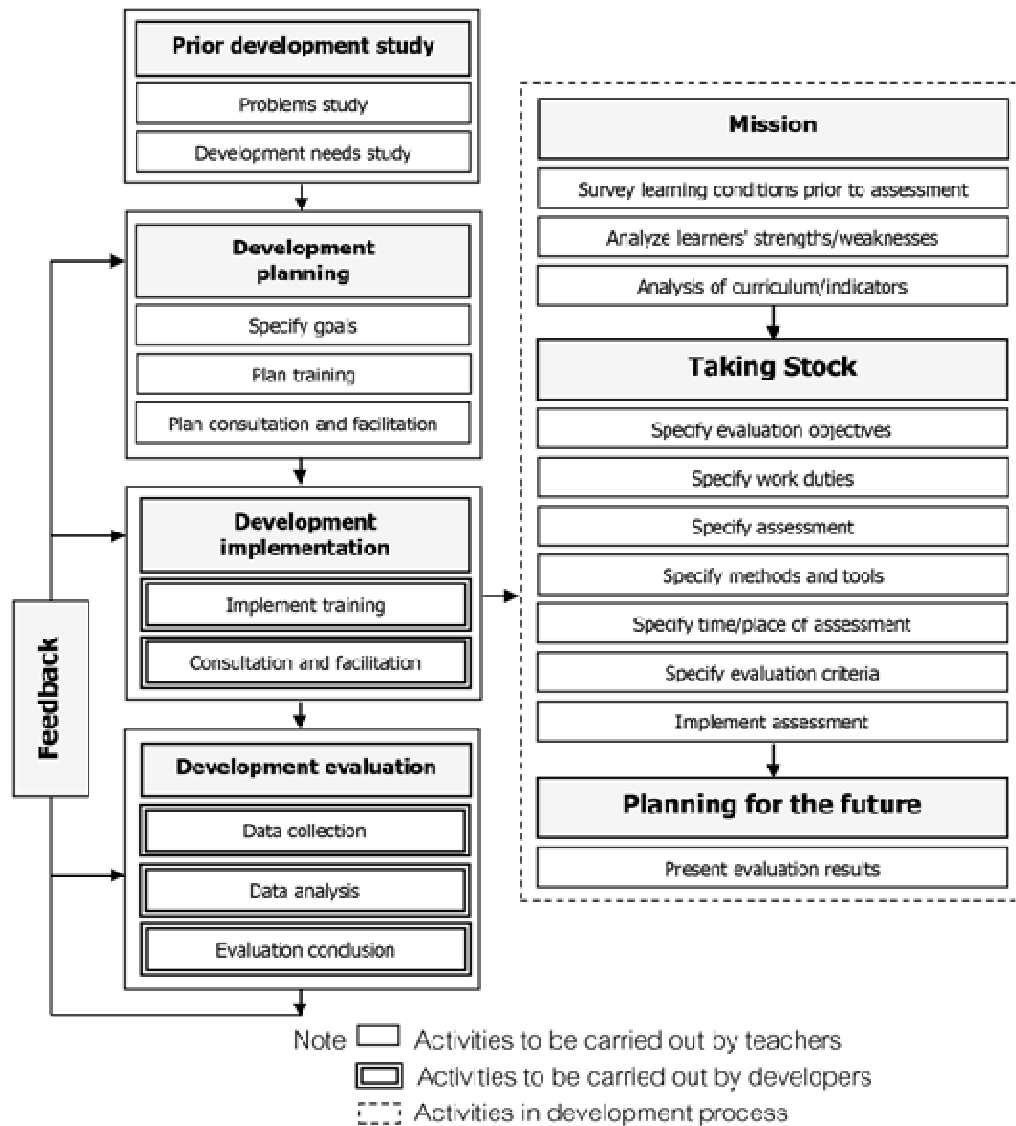The first step is prior development study, comprising

Figure 1. Teachers development model through authentic assessment by adopting empowerment evaluation approach.

nature of problems and development needs. In teachers' development, researchers play a role of consultation, facilitation and motivation so that teachers can evaluate themselves through authentic assessment of the current situation, and formulate development goals.

The second step is teachers' development planning, comprising setting goals, training methods, consultation and facilitation. Researchers play a role of consultation and facilitation during brain-storming session and motivate teachers to feel that they are stakeholders in teachers' development and joint evaluations, which is in line with a practical research on empowerment that creates intimacy and ownership feelings (Fetterman,

1998).

The third step is teachers' development implementation, comprising training to equip teachers with skills and procedures to carry out authentic assessment, as well as providing consultation and facilitation to impart evaluation experiences to teachers. It is essential that school administrators realize that they need to provide adequate material support and facilities as authentic assessment needs more resources than traditional method (Hart, 1994; Virginia Education Association and the Appalachia Educational Laboratory, 1992; Department of Curriculum and Instruction Development, 1999).

The fourth step is teachers' development evaluation,

Table 3. Difference between pre and post-experiment development model on comprehension, attitude, capability.

School	n	Pre		Post		t
		Mean	S.D.	Mean	S.D.	
Comprehension						
A (S)	5	2.85	0.20	4.05	0.19	9.63**
B (M)	11	2.81	0.27	4.16	0.20	11.47**
C (L)	16	2.67	0.14	4.38	0.19	27.58**
Total	**32**	**2.75**	**0.21**	**4.25**	**0.23**	**23.34****
Attitude						
A (S)	5	3.40	0.28	4.37	0.14	5.36**
B (M)	11	3.04	0.69	4.40	0.13	6.15**
C (L)	16	3.15	0.36	4.41	0.15	13.22**
Total	**32**	**3.15**	**0.49**	**4.40**	**0.14**	**13.29****
Capability						
A (S)	5	2.05	0.27	3.87	0.31	7.43**
B (M)	11	1.89	0.13	4.21	0.24	35.08**
C (L)	16	2.00	0.18	4.35	0.17	43.30**
Total	**32**	**1.97**	**0.18**	**4.23**	**0.27**	**38.03****

comprising data collection/analysis and evaluation conclusion. The researchers play the role of data collection/analysis, conclusion as well as provide consultation and facilitation during implementation and after development so as to be able to adjust development plan and monitor progress.

The third step consists of developing teachers through authentic assessment by empowerment evaluation.

The first stage is to determine mission, comprising survey of students' competencies prior to assessment, analysis of students' strengths and weaknesses, analysis of curriculum and indicators, all of which stakeholders must jointly determine mission goals so that group of people can generate learning and express a variety of opinions. This can be done via practice workshop which facilitates team building to implement the next step (Fetterman, 1996).

The second stage is taking stock, comprising specifying objectives, work duties, evaluation tools and methods, time and place, evaluation criteria. During this stage, we must be able to answer where we stand in relation to the stated mission, and to take stock what we have in the project or organization in order to identify the strengths and weaknesses of what we are doing.

The third stage is planning for the future. This stage reveals evaluation results of students' advance by documenting progress. After project evaluation, stakeholders may pose a question "From this point on, how to make for successful project?" so that they can jointly determine the objectives in line with the mission,

choose and plan for the future through brain-storming session to arrive at consensual strategies to be implemented (Fetterman, 1996).

The third period was the experiment using teachers development model with 32 sample teachers in small (A), medium (B), and large (C) primary schools to gauge authentic assessment comprehension, attitude and capability pre and post-experiment. (Table 3)

Table 3 shows the experiment using teachers development model with 32 sample teachers in small (A), medium (B), and large (C) primary schools to gauge authentic assessment comprehension, attitude and capability pre and post-experiment, which yielded higher development at .01 significant level were knowledge (pre = 2.75,S.D.=0.21, post = 4.25, S.D.=0.23), attitude (pre = 3.15,S.D.=0.49, post = 4.40,
S.D.=0.14) and capability (pre = 1.97, S.D. = 0.18, post = 4.23,S.D.=0.27). It also shows the effectiveness of teachers' development model to authentic assessment by empowerment evaluation approach found teachers' authentic assessment comprehension, attitude and capability higher after the experiment. This may be due to the empowerment model that was designed to support self-help, decision and realization of the need for assessment and teachers feel being a stakeholder (Fetterman, 1996).

The fourth period was the evaluation of teachers' development model. Samples comprised the same 32 teachers in the second period. Study variables were evaluation standards of utility, feasibility, accuracy,

Table 4 Teachers development model's utility, feasibility, propriety, accuracy and satisfaction scores.

School	n	Utility		Feasibility		propriety		Accuracy		Satisfaction	
		Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
A (S)	5	3.99	0.45	3.81	0.36	3.69	0.54	3.75	0.40	3.56	0.51
B (M)	11	3.63	0.55	3.63	0.61	3.69	0.49	3.63	0.56	3.63	0.52
C (L)	16	3.62	0.51	3.60	0.54	3.70	0.75	3.60	0.60	3.70	0.48
Total	**32**	**3.79**	**0.54**	**3.71**	**0.51**	**3.70**	**0.58**	**3.68**	**0.53**	**3.62**	**0.49**

Note : 1) Scores of authentic assessment are measured by 5 levels: 1.00-1.50= very low, 1.51-2.50 = low, 2.51-3.50= medium, 3.51-4.50 = high, 4.51-5.00 = very high,   2) A (S)=Small, B (M) = Medium, C (L) = Large school.

propriety and teachers' satisfaction of the model (Table 4).

Table 4 shows the evaluation of experiment model results. Sample teachers gave high scores for model's utility (Mean = 3.79, S.D. = 0.54), feasibility (Mean = 3.71, S.D. = 0.51), propriety (Mean = 3.70, S.D. = 0.58), accuracy (Mean = 3.68, S.D. = 0.53) and satisfaction (Mean = 3.62, S.D. = 0.49). The teachers' development model experiment was found to help teachers' comprehension and realization of the need for authentic assessment. The model was valuable, feasible, propriety, reliable and helpful in carrying out authentic assessment in line with students' conditions, which was in accord with (the Joint Committee on Standards for Educational Evaluation, 1994; Cited in Stufflebeam and Shinkfield.) Teachers expressed satisfaction with the development model as it helped them to comprehend and implement authentic assessment by themselves and they could design authentic assessment in accord with students' capability and potentials. The model strengthened teachers' confidence in carrying out teaching innovation and that they received material support from higher-ups.

Conclusion

The results of this study have shown that primary school teachers did not use authentic assessment results to develop learners. Therefore, those responsible for teachers' training and development should encourage teachers to use assessment results to help develop students and that school administrators should specify that assessment results be used to improve learning and they must continually monitor teachers to make sure that it is carried out (Wongwanich, 2000).

To utilize teachers' development model through authentic assessment, detailed plans and work scope must be specified to make it clear for teachers to implement. Plans must come from teachers' consensus so that they feel they are stakeholders (Wonggom, 2004).

It is essential that teachers development researchers convince school administrators the need to provide adequate material support and facilities and that schools must bear responsibility and learning together with teachers, not abandoning teachers to learn and carry out evaluations on their own (Prawanphruek, 2004).

Empowerment evaluation approach needs teamwork. Before it is used for teachers development in authentic assessment, teachers must be trained to work co-operatively, democratically and with reasons (Fetterman, 1993).

It was found that teachers had high workloads in teaching and non-teaching activities. To effectively carry out teachers development model, teachers should be encouraged to learn authentic assessment in synergy with other skills.

RECOMMENDATIONS

This research was carried out for a single learning subject so as to get accurate results of authentic assessment. To shed light to total learning picture, other subjects should be researched as well as including secondary school teachers.

Empowerment evaluation approach stresses joint planning and problem-solving to create sustainable development. This approach can be applied in several teachers development contexts including ideas, analysis, and written communication.

Conflict of Interests

The authors have not declared any conflict of interests.

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