A study of a model of a training programme for classroom research in vocational education

Sumalee Chanchalor, Komson Jirapattarasilp & Mongkol Chaisri

King Mongkut's University of Technology Thonburi
Bangkok, Thailand

ABSTRACT: In this research, the authors sought to determine a model for a training programme for classroom research (CR). This was carried out by a survey, as well as practice. Finally, a training programme of classroom research was developed and implemented. The study by a survey has found that trainees' attitude was the most important variable in predicting confidence to complete classroom research, then academic atmosphere, researchers' abilities and outside support. A suitable model of a training programme for CR of personnel then developed in a step-by-step manner with advisors. This began with a workshop on the content, CR planning, experience in undertaking their own CR, and the presentation of their work, respectively. The model of the workshop was to provide information, facilitate group work and utilise presentations, as well as enhance refection skills. The follow up and time management were other important techniques of this model.

INTRODUCTION

The process of research is a strategy that is applied seeking information and searching for the best answer of each event that is changing all the time. Regarding implementation, educational institutions are confronted with complicated environments wherein it is difficult to attain their objectives. Personnel and organisations should try to improve working efficiency under such changing circumstances.

Action research is a method that considers how to improve understanding of change as it relates to the performance of organisations, society and individuals. It is the application between theory, practice and policy for balance. Furthermore, it helps to develop innovation in the organisation and to build a learning organisation [1]. The process of activities that support classroom research (CR) should be planned to be in a loop of plan, action, observe/check and reflect. This loop is continuous until learning has improved and learners meet their targets.

The management of vocational education should be knowledge-based and performance-based for sustainable and continuous development that affects the economy, society and the environment. Providing products and services to society is the policy of vocational education, it has to respond to basic human needs, engender good quality of life, and reduce environmental pollution and the use of natural resources [2]. In order to prepare people for the labour society, it needs to have learning programmes that focus not only on mechanical practice and study about techniques, but also foster learners to have high level thinking, know how to solve problems and skills to cooperate with others [3].

An initial review has found that there was little classroom research at vocational institutions. Most training programmes that develop personnel skills emphasised vocational specialisations rather than general characteristics. They were not overly concerned with characteristics that relate to learning organisations, such as searching for knowledge by themselves. This implies that learners will not develop these characteristics sufficiently. The courses generally focus on prior learning and performing by imitation over open opportunities for learners to think individually. The curriculum concern is on the subject matter, rather than opportunities for learners to learn according to their own interests. This can foster boredom in learners because learners of this age are enthusiastic to try new things. Therefore, they often cause problems in society. A prior study revealed that personnel at vocational institutions were not accustomed to carrying out classroom research and did not use research that paralleled teaching. Otherwise, the curriculum had weak points in developing activities for learning because it emphasised the subject matter.

There are various styles of classroom action research to solve these problems in different contexts. Baskerville plus others emphasised using classroom research both in general and subordinate status, which were linked to behaviour, learning or cooperative learning [4]. This study focuses on an efficient model of a training programme to develop personnel's potential in classroom research to be able to used CR at an educational institution, which is an important mechanism in managing education. Personnel can then utilise CR in line with teaching in order to solve problems encountered in learning.

OBJECTIVES

In general, this study targeted finding a suitable model of a training programme for classroom research. In the *first phase*, the objectives were to study personnel's opinion towards CR and to study the variables that affect personnel's success of classroom research. The *second phase* focused on identifying a training programme model by developing a training programme of classroom research for vocational personnel.

RESEARCH HYPOTHESES

The research hypotheses are as follows:

1. Trainees achieve higher scores on post-tests than for pre-tests;
2. Trainees had better attitude towards classroom research after training than before training;
3. Half of the trainees could completely do their CR report.

SCOPE OF THE STUDY

There are two phases of study: theory and practice (see Figure 1).
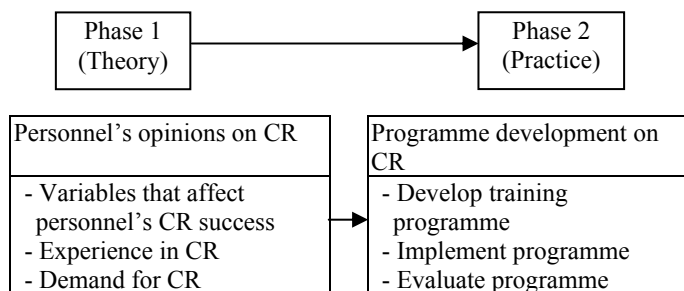
Figure 1: Scope of the study.

For the first phase (theory), 962 lecturers from vocational institutions shared their opinions by a questionnaire. For phase 2 (practice), 30 personnel were initially trained in this programme for one and a half days, but it was found that this was insufficient time. Then 70 personnel, separated into two groups, were trained for three days. Finally, 25 lecturers were trained by this programme.

PROCEDURE

To study the variables that affect classroom research, a questionnaire was developed, checked by experts and trialed on a group of vocational personnel for quality. The alpha coefficient for the questionnaire was between 0.87 and 0.96. This was then distributed to personnel from 70 vocational institutions from a part of Thailand to share their opinions on those variables affecting successful CR. They were also surveyed about their demand for such training programmes. The data of first study was analysed and the information helped in the development of a training programme.

The CR training programme covered 28-35 hours. The programme was first tried out on lecturers at a school in Bangkok over two days. One obstacle discovered was that of time; personnel could not apply their knowledge. It was found that in learning about CR, trainees needed direct experience in carrying out CR. Thus, the improved programme is workshop-based and separated into two sections for a two-day workshop. Trainees had to plan and engage in CR at their institution, with one day for presentation, as shown in Figure 2.
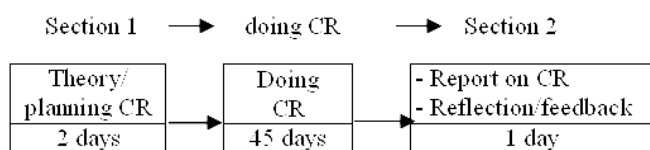
Figure 2: Model of the training programme.

The details of the programme are as follows:

- Two days of theory in a workshop, with 30-45 minutes of information presentation for each topic, then 30-60 minutes of group work, then a team presentation; this model of training is shown in Figure 3;
- Trainees engaged in classroom research in an authentic classroom, and it took about 45 days, during which the trainees could consult their trainer by letter or e-mail;
- Trainees then had to produce their own CR report and present to the trainer and other trainees, covering one day. The trainer had to comment on, or suggest, some aspects of their task. This section is assessed by quality and number of tasks.
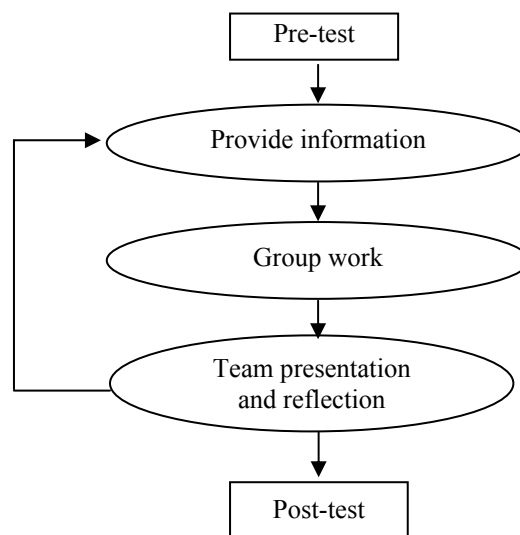
Figure 3: Model of learning for each topic.

The training programme was implemented once more with lecturers in a small school. The training programme was run before the start of their semester until the end of semester, and was separated into three sections. First, there were two days of theory with workshops. The model of learning for each topic was similar to that of Figure 3. Trainees were assigned to search for innovation and write their own plan for CR. Second, trainees presented their plan/proposal for CR, while trainers provided suggestions and feedback to their plan. After that, they had to undertake their CR in class. Third, the trainees had to present their CR strategy in the training programmes so that it became administration policy that all lectures have to do CR. Another strategy was using follow up techniques that are set by the programme management. The technique of guidance and feedback was also utilised.

RESULTS

For the *first phase*, it was found that ⅓ of the trainees were interested in CR to a moderate level, while ⅔ preferred to participate in a CR training programme. Those surveyed thought that personnel attitude towards CR was the most important factor for successfully undertaking CR, as listed in Table 1.

Table 1: Personnel opinions regarding key variables for successfully undertaking CR.

Issue	$\bar{X}$	S.D.	Rank
1.Support	3.24	1.04	4
2.Accadamic atmosphere	3.44	0.92	2
3.Personnel attitude	3.62	0.83	1
4.Ability for CR	3.29	0.96	3

The study next looked at variables affecting successful CR. Using regression analysis, it was found that personnel concentration, ability to state the problem, understanding of CR, experience of participation in analysing data, and learning assessment using more than three methods, were variables that significantly explained their confidence to undertake CR, as listed in Table 2.

Table 2: Variables affecting personnel confidence for CR.

Model	Non-standardised Coefficients		Standardised Coefficients	
	B	S.E.	Beta	t
Constant	-1.63	0.18		0.89
Short course on research (X_1)	-0.01	0.07	-0.00	-0.09
Participation in doing research (X_2)	0.08	0.06	0.05	1.21
Concentration (X_3)	0.24	0.04	0.19	5.93**
Ability to state the research problem (X_4)	0.23	0.08	0.12	3.02**
Understand the research process (X_5)	0.29	0.07	0.17	4.48**
Construct the research tool (X_6)	-0.03	0.07	-0.02	-0.33
Participation in analysing data (X_7)	0.18	0.07	0.12	2.55**
Tried out new methods of teaching (X_8)	0.10	0.05	0.08	1.958
Teaching assessment using more than three methods (X_9)	0.19	0.05	0.15	3.88**
Solving problems with research (X_{10})	0.11	0.06	0.07	1.89

R^2=0.32: F=34.245: S.E.=1.029

These variables explained 32% of personnel opinion towards the success of doing CR. The regression equation is:

$$\hat{Y} = -1.63 - .01X_1 + .08X_2 + .24X_3 + .23X_4 + .29X_5 - .03X_6 + .18X_7 + .10X_8 + .19X_9 + .11X_{10}$$

Regarding personnel suggestions and the level of demand for training in CR, it was found that a high percentage of personnel asked for follow ups, knowledge concerning teaching innovation, CR planning, media construction, and consultation with advisors, as shown in Table 3.

Table 3: Percentage demand for CR training.

Issue	Percentage
1. Follow up	41
2. Knowledge on teaching innovation	41
3. CR planning	39
4. Advisors	39
5. Media construction	39

For the *second phase*, the CR training programme was developed and implemented to determine an efficient model of implementation. The content was as follows:

- Activities for building trainees' awareness;
- Concept of classroom research;
- Problem analysis;
- Learning innovation;
- Measurement and evaluation;
- Case studies;
- CR planning;
- Writing reports;
- Engaging in CR;
- Presentation of CR work.

For the first implementation of this model over one and a half days, trainees obtained no significant difference between their pre-test and post-test scores. It revealed that trainees needed more time to practice and follow up CR. For the second trial of 70 vocational lecturers, the training programme model was separated into two sections, including doing CR and a follow up. It was found that trainees gained higher achievement scores and had a better attitude towards CR on post-test than those of the pre-test workshop section, as shown in Tables 4 and 5. Interestingly, the mean score of achievements on the post-test was not much higher than for the pre-test; however, the attitude scores on the post-test were much higher.

Table 4: Comparison of pre-test and post-test achievement scores of trainees.

Test	n	$\bar{X}$	S.D.	T
Pre-test	70	21.76	2.83	6.64**
Post-test	70	23.91	2.49	

**p< 0.01

Table 5: Comparison of pre-test and post-test attitude scores of trainees.

Test	n	$\bar{X}$	S.D.	t
Pre-test	70	56.57	5.75	5.82**
Post-test	70	62.22	5.93	

**p< 0.01

Trainees were satisfied with the training programme for almost every item except time, as in listed in Table 6.

Table 6: Trainees' opinions of the training programme.

Issue	$\bar{X}$	S.D.
1. Content	3.93	0.75
2. Model of presentation	3.57	0.68
3. Document	3.81	0.70
4. Trainer	3.99	0.69
5. Time	3.04	0.86
6. Opinion of the whole programme	3.67	0.64

Trainees were satisfied with the whole programme except for the timing. This workshop was constrained by the time in which trainees had to carry out their own routine duties. It was not the administration's policy, so they sometimes had to depart from the programme.

Trainees produced 39 pieces of CR at their institutions and made complete reports; this was more than expected. The quality of tasks was average; some reports were interesting but some had to be improved. However, some problems were found on time management and administration policy.

The training programme model was improved, which brought it to its third implementation for 25 trainees with a clarified policy for each lecturer to undertake CR. The training programme model (see Figure 4) was modified and divided into three sections and followed up by trainers.

Section 1 ⟶ Section 2 ⟶ do CR ⟶ Section 3

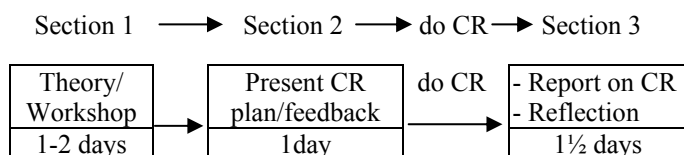| Theory/ Workshop 1-2 days | Present CR plan/feedback 1day | do CR | - Report on CR - Reflection 1½ days |

Figure 4: Model of the training programme.

For the theory/workshop section, the model of learning was as shown in Figure 3. It was found that all trainees undertook CR to solve problems or to improve their teaching. Almost all of them completed their reports; ten reports were of a good quality, ten reports were average and a few reports had to be improved. This indicated the success of the training programme. Some strategies used in this training programme were feedback for their assignment and administration policy that *all lecturers have to undertake CR.* Follow up was another effective technique set by programme management.

CONCLUSION AND DISCUSSION

Using regression analysis, a study of the factors of personnel backgrounds that influenced success found that five key variables had high explanation power, as follows: interest in undertaking classroom action research, the ability to specify problems of action research, understanding about the process of carrying out research, participating in analysing information with others and evaluation of teaching, using more than three methods of evaluation. This study conformed to Arjwarin, who found that three out of eight factors that affected the efficiency of a researcher were: knowledge and ability of research methodology, the ability to choose and develop instruments to collect data, and the ability to implement the research.

A study of the opinions concerning those factors that were important to the successfully undertaking research found that the first important factor rated by personnel at a high level was personnel attitude. The rest was rated at the moderate level. This result conforms to Tochinda in that factors related to the success of work covered three dimensions: organisation, administrators and trainees, and he stated that they needed to have good attitudes towards training, organisation placed importance on personnel resources, and the administrators placed importance on training and appropriately supported facilities [5].

This study into a model of periodical training programme revealed an important finding. Personnel were satisfied with the contents of the curriculum, the contents of documents, patterns of training, the lecturer, as well as knowledge and skills at the *very much* level. This training was workshop-based, including lectures and practice, small group discussions, and presentations to a big group. The facilitators introduced some guidelines for trainees, as Coyle suggested that the trainees should participate in discussions in small groups and there should be guidance in the group [6]. Trainees participated in every activity and the lecturers gave them feedback. This technique yielded good results. However, this training was limited with regard to time because the period of training was rather short and trainees could not always discuss all of the issues. Further, some trainees had other work to do so they could not always participate in an activity or perform according to the programme, with little time for the assignment. Some trainees could not attend the training in the allocated time. Another point was that there was a lot of contents to learn;

thus, it did not go into great detail, especially on the issue of *innovation*. Trainees could not search efficiently for new innovations to solve problems in the classroom. As such, the planning of the innovation was not clear in the implementation stage.

The researchers used follow up techniques, and guidance via e-mail, mail or telephone, so the research results attained the objectives, conformed to the prior survey and the study of Ratanasri et al, which suggested strategies of guidance to motivate personnel to undertake CR for teaching development [7]. On the issue of time, which conformed to previous studies with various group of teachers, it could be summarised that time management was an important factor that caused teachers not to undertake CR. Therefore, trainees should be assigned and supported by administrators. Also, the curriculum should be divided into sub-sections. Performance results should be discussed in relation to, and emphasis placed on, continuous training [6]. Trainees proposed follow up sessions after the real situation, and suggested to meet periodically after being assigned tasks and highlighting problems to be discussed.

The post-test scores were higher than the pre-test scores, which was in accordance with the hypothesis. The scores were higher not so much because of time constraints. This training emphasised practice more than theory. Moreover, there were conditions about the readiness of the trainees. Also, the trainees were worried about their daily routines more than undertaking CR.

From observing and interviewing some personnel, it was found that a lack of understanding of some contents, eg the concept of learning innovation and how to build the measurement instruments, were factors that affected unsuccessful carrying out of CR, which conformed to a prior survey. Therefore, before the implementation of the programme, personnel should learn more about learning innovations and construction tools to access, which was the basic information for the trainees. The programme should incorporate more time or in service training. Experienced personnel or lecturers have to follow and guide trainees periodically. This model of training programme is quite effective.

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